APPENDIX A
NOP COMMENTS

NOTICE OF PREPERATION COMMENTS RECEIVED

#	Comment Letter / Public Speaker	Summary of Issues	EIR Section Addressed In
1	Mary Weiss (Email Dated: 12/28/2018)	• Impact of additional traffic on streets • Speed limit signs • Street lighting • Additional stop signs along Descanso or at the corner of old River and Descanso • Speed barriers • Emergency Evacuation	• Section 4.12 *Land Use* and Section 4.18 *Transportation* • Section 3.0 *Project Description* • Section 4.18 *Transportation* • Section 4.18 *Transportation*
2	San Diego County Archaeological Society, Inc. (Letter Dated: 11/29/18)	• Request copy of cultural resources technical report and EIR for review, when available.	• City of Oceanside to provide directly to requestor
3	Rincon Band of Luiseno Indians, Destiny Colocho (Email Dated: 12/26/18)	• Request initiation for tribal consultation in compliance with AB 54 • Request archaeological record search and assessment, when available	• Section 4.19 *Tribal Cultural Resources* • City of Oceanside to provide directly to requestor
4	San Luis Rey Band of Mission Indians, Merri Lopez-Keifer (Letter Dated: 1/7/19)	• Request initiation for tribal consultation in compliance with AB 54 • Native American Monitor during all ground disturbing activities • Native American Monitor during tribal cultural resource assessment surveys	• Section 4.19 *Tribal Cultural Resources* • Section 4.6 *Cultural Resources* and Section 4.19 *Tribal Cultural Resources*
5	Native American Heritage Commission (Letter Dated: 12/3/18)	• Recommendation for consultation with California Native tribes that are traditionally and culturally affiliated with the geographic area in compliance with AB 52 and SB 18	• Section 4.19 *Tribal Cultural Resources*
6	California Department of Transportation (Letter Dated: 11/30/18)	• Prepare a traffic impact study and coordinate with Caltrans • Address Complete Streets and Climate Change policies • Coordinate with Caltrans to implement necessary improvements at intersections and interchanges • Include mitigation measures to state facilities in traffic impact study, if required. • Any work within Caltrans ROW requires approval from Caltrans and an encroachment permit.	• Section 4.18 *Transportation* • Section 4.9 *Greenhouse Gas Emissions* • This comment is noted. • Section 4.18 *Transportation* • No work within the Caltrans ROW required
7	Wittwer Parkin LLP (Letter Dated: 1/4/19)	• Identify if Section 401, 404, NPDES, ESA or Streambed Alteration Agreements are required.	• Section 4.5 *Biological Resources*

#	Comment Letter / Public Speaker	Summary of Issues	EIR Section Addressed In
		• Analyze any impacts to San Luis Rey River. • Avoid piecemealing project in EIR analysis. • Discuss all topics of environmental impacts required by CEQA • Evaluate agricultural lands per FMMP guidelines and Williamson Act contract impacts. • Disclose baseline air quality conditions and project impacts on baseline, including cumulative air quality impacts. • Disclose baseline greenhouse gas emission conditions and project impacts on baseline, including cumulative GHG impacts. • Describe status of City Climate Action Plan and if City is on track to meet targets. • Include feasible mitigation measures for any Air Quality or Greenhouse Gas impacts. • Evaluate potential hazardous materials impacts to workers or river. • Evaluate if demolition of structures will result in asbestos or lead-based paint exposure. • Evaluate hazardous impacts to Nichols Elementary School. • Evaluate any direct or indirect impacts to San Luis Rey River. • Evaluate any flooding hazards related to adjacent San Luis Rey River. • Provide all project notices for review.	• Section 4.11 *Hydrology and Water Quality* • Section 4.0-7.0 of the EIR • Section 4.3 *Agriculture and Forestry Resources* • Section 4.4 *Air Quality* and Section 5.0 *Cumulative Impacts* • Section 4.9 *Greenhouse Gas Emissions* and Section 5.0 *Cumulative Impacts* • Section 4.9 *Greenhouse Gas Emissions* • Section 4.4 *Air Quality* and Section 4.9 *Greenhouse Gas Emissions* • Section 4.10 *Hazards and Hazardous Materials* • Section 4.4 *Air Quality* and Section 4.10 *Hazards and Hazardous Materials* • Section 4.10 *Hazards and Hazardous Materials* • Section 4.11 *Hydrology and Water Quality* • Section 4.11 *Hydrology and Water Quality*
8	Lawrence Burnett (Written Comment: 12/4/18)	• Evaluate emergency evacuation in relation to wildlife and additional ingress and egress options • Evaluate impacts to privacy of properties on Trinity Street.	• Section 4.21 *Wildfire* and Section 4.18 *Transportation* • Privacy measures would be determined at the time of Project Site development based on the residential building type
9	Anonymous NOP Commenter (Written Comment: 12/4/18)	• Evaluate if any chances to flood protection is required • Disclose if any low income housing will be provided	• Section 4.11 *Hydrology and Water Quality*
10	John and Maria Cofey (Written Comment: 12/4/18)	• Address any potential security issues • Evaluate any privacy issues related to homes near the property line and 2-3 story proposed development • Analyze emergency egress/ingress • Evaluate any soil chemical impacts from past agricultural use • Identify how the project will provide sufficient parking,	• Section 4.16 *Public Services* • Privacy measures to be determined at the time of Project Site development based on the residential building type • Section 4.18 *Transportation* • Section 4.10 *Hazards and Hazardous Materials* • To be provided on future Site Development Plans

#	Comment Letter / Public Speaker	Summary of Issues	EIR Section Addressed In
		particularly guest parking • Evaluate traffic issues related to Avenida Descanso to Old River Road • Determine if the project will result in any health issues • Evaluate Air Quality and GHG impacts, noise impacts, biological resources, flood issues, utilities and energy • Disclose if affordable housing will be provided or an issue. • Provide notices for review	• Section 4.18 *Transportation* • Section 4.10 *Hazards and Hazardous Materials* and Section 4.4 *Air Quality* • Section 4.4 *Air Quality,* Section 4.9 *Greenhouse Gas Emissions,* Section 4.14 *Noise,* Section 4.5 *Biological Resources,* Section 4.11 *Hydrology and Water Quality,* Section 4.20 *Utilities and Service Systems,* Section 4.7 *Energy*
11	Public Speaker Comments during NOP Scoping Meeting	• Evaluate Soils contamination and potential for hazardous materials dumped at the site. • Describe if future developer can change proposed standards. • Determine if project will exacerbate traffic shortcutting through Rancho Pacifica Community via Avenida Descanso and Old River Street • Evaluate an alternative maintaining site as light industrial and describe need for land use change • Evaluate any privacy issues related to homes near the property line and 2-3 story proposed development • Evaluate potential safety issues • Disclose if affordable housing will be provided or a safety issue. • Provide information on and increased landscaping along project boundary • Project will diminish home values • Evaluate speed on North River Road and safety issues • Public input will not be evaluated or incorporated • Describe project effects on existing SDG&E ROW • Describe future allowable land uses • Analyze noise impacts from North River Road • Identify how the project will provide sufficient parking, particularly guest parking • Disclose maximum number of units allowed to be built • Analyze emergency egress/ingress • Evaluate if construction dust will affect sensitive receptors, such as adjacent neighbors	• Section 4.10 *Hazards and Hazardous Materials* • Section 4.18 *Transportation* • Section 7.0 *Alternatives* • Privacy measures would be determined at the time of Project Site development based on the residential building type • Section 4.10 *Hazards and Hazardous Materials* • Section 3.0 *Project Description.* Landscaping to be designed on future Project Site development plans • Section 4.18 *Transportation* • Section 4.7 Energy and Section 4.20 *Utilities and Service Systems* • Section 3.0 *Project Description* • Section 4.14 *Noise* • Section 3.0 *Project Description* • Section 3.0 *Project Description* • Section 4.18 *Transportation* • Section 4.4 *Air Quality*

#	Comment Letter / Public Speaker	Summary of Issues	EIR Section Addressed In
		• Evaluate safety issues related to townhomes vs. apartments, in relation to renters vs. owners • Identify street names on all EIR figures • Evaluate past chemical use and soil contamination	• Street names are provided on all Figures 2.2-1 through Figure 4.14-1 • Section 4.10 *Hazards and Hazardous Materials*

NOP Comment #1 - Mary Weiss

Sergio Madera

From: Mary Weiss <1163putnam@gmail.com>
Sent: Friday, December 28, 2018 3:51 PM
To: Sergio Madera
Subject: North River Rd Project

Dear Mr. Madera,

It was so nice to talk with you the other day. We appreciate you taking the time to contact us. As I said, my husband and I live at 94 Avenida Descanso. We are the first house on the right as you turn from North River onto Descanso.

We believe in the public good and progress for our community. We have no general objections to the proposed project. People need a place to live!

Our concerns are for the impact the additional traffic will have on our street. Currently, there are many vehicles using the route from Old River to Descanso to North River as a short cut to avoid traffic and stoplights. Many drivers speed through with no thought of safety to our children or pets. With more residents living in the vicinity, we will definitely see increased traffic.

We have a few suggestions we feel should be considered by the City and the developer of the properties.

Speed limit signs
Better street lighting
Additional stop signs along Descanso or at the corner of Old River and Descanso
Speed barriers, if possible paid for by developer

Our other major concern is actually still about traffic. In case of a fire or other natural emergency, it will put both our neighborhood and the new complex's residents in greater danger as we attempt to evacuate in a timely manner. With the San Luis Rey River, there are only two means of egress from the area, Douglas Drive and College Blvd. During the Lilac Fire last year, there was gridlock in the process of evacuating. Plans must be developed to alleviate this potentially dangerous situation.

Thanks for your attention to this matter. Most assuredly, we will see you at the next meeting concerning this project.

Sincerely,

Mitchell and Mary Weiss

NOP Comment #2 - San Diego County Archaeological Society, Inc.

San Diego County Archaeological Society, Inc.

Environmental Review Committee

29 November 2018

RECEIVED

DEC 4 2018

CITY OF OCEANSIDE
DEVELOPMENT SERVICES

To: Mr. Sergio Madero, Senior Planner
City of Oceanside
300 North Coast Highway
Oceanside, California 92054

Subject: Notice of Preparation of a Draft Environmental Impact Report
North River Road Planned Block Development Overlay District
GPA13-00001, ZA13-00001, D17-00007, and
GPA13-00004, ZA13-00008, D17-00006

Dear Mr. Madero:

Thank you for the Notice of Preparation for the subject project, which was received by this Society last week.

We are pleased that cultural resources have been included in the list of subject areas to be addressed in the DEIR. In order to permit us to review the cultural resources aspects of the project, please include us in the distribution of the DEIR when it becomes available for public review. Also, in order to facilitate our review, we would appreciate being provided with one copy of the cultural resources technical report(s) along with the DEIR.

SDCAS appreciates being included in the environmental review process for this project.

Sincerely,

James W. Royle, Jr.

James W. Royle, Jr., Chairperson
Environmental Review Committee

cc: SDCAS President
File

NOP Comment #3 - Rincon Band of Luiseno Indians

Sergio Madera

From: Destiny Colocho <DColocho@rincon-nsn.gov>
Sent: Wednesday, December 26, 2018 10:04 AM
To: Sergio Madera
Subject: North River Road Planned Block Development Overlay District

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Dear Mr. Madera

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your Notice of Preparation of an Environmental Impact Report (EIR) regarding the above referenced project and we thank you for the opportunity to consult. The identified location is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest.

Embedded in the Luiseño territory are Rincon's history, culture and identity. Rincon has knowledge of one Luiseño Traditional Cultural Place (TCP),*Tamiymay ,* within a half mile of the project site. We request consultation at this time in order to learn more about the project and any potential impacts to cultural resources. In addition, we recommend that an archaeological record search and assessment be conducted as part of the EIR and ask that a copy of the results be provided to the Rincon Band.

If you have additional questions or concerns please do not hesitate to contact our office at your convenience at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Please note the change in email below. @rincontribe.org will still be operational until the end of 2018, but please update your contact list to reflect the change to @rincon-nsn.gov

Destiny Colocho, RPA
Cultural Resource Manager and Tribal Historic Preservation Officer
Cultural Resource Department
Rincon Band of Luiseño Indians
1 West Tribal Road | Valley Center, CA 92082
Office:760-297-2635 | Cell: 760-705-7171
Fax: 760-692-1498
Email: dcolocho@rincon-nsn.gov

NOP Comment #4 - San Luis Rey Band of Mission Indians

SAN LUIS REY BAND OF MISSION INDIANS

1889 Sunset Drive • Vista, California 92081
760-724-8505 • FAX 760-724-2172
www.slrmissionindians.org

January 7, 2019

Sergio Madera
Principal Planner
Planning Division
City of Oceanside
300 N. Coast Hwy.
Oceanside, CA 92054

VIA ELECTRONIC MAIL
SMadera@ci.oceanside.ca.us

RE: TRIBAL RESPONSE REGARDING THE NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE NORTH RIVER ROAD PLANNED BLOCK DEVELOPMENT OVERLAY DISTRICT

Dear Mr. Madera:

We, the San Luis Rey Band of Mission Indians ("Tribe") have received and reviewed the City of Oceanside's ("City's") Notice of Preparation ("NOP") of a Draft Environmental Impact Report for the North River Road Planned Block Development Overlay District ("Project") dated November 21, 2018 and inquiry whether the Tribe has any knowledge of cultural resources or sacred places that may be impacted by the proposed Project. The Tribe is also aware, from the NOP, that this Project requires a General Plan Amendments. To date, the Tribe has not received consultation notices for this Project pursuant to AB 52, nor SB 18. The Tribe is hopeful to consult with the City regarding this Project's proposed General Plan Amendment and potential negative impact to our sacred tribal cultural resources within the immediate future.

As you are aware, we are a northern San Diego County Tribe whose traditional and culturally affiliated territory includes Camp Pendleton, the current cities of Oceanside, Carlsbad, Vista, San Marcos and Escondido, as well as unincorporated areas in northern San Diego County, such as the communities of Fallbrook, Bonsall and Valley Center. We are resolute in the preservation and protection of tribal cultural resources within all these jurisdictions.

Our Tribe is aware of a multitude of tribal cultural resources and sacred places within the proposed Project area. The Tribe strongly urges caution in assessing the land encompassing the this area for development purposes, as well as incorporating the presence of a Luiseño Native American monitor during all ground disturbing activities (including any geotechnical and/or exploratory excavations) and tribal cultural resource assessment surveys.

The Tribe has enjoyed a mutually respectful relationship with the City over the years and would appreciate an opportunity to continue to discuss this Project's potential negative impact on our Luiseño cultural resources via the statutorily mandated AB 52 and SB 18 requirements of government to government consultation.

We appreciate the opportunity to share with the City of Oceanside our concerns regarding this Project and thank you for your assistance in protecting our invaluable Luiseño Native American cultural resources.

Sincerely,

Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians

NOP Comment #5 - Native American Heritage Commission

STATE OF CALIFORNIA

Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

December 3, 2018

Sergio Madera
City of Oceanside
300 North Coast Highway
Oceanside, CA 92054

RE: SCH# 2018111034 North River Road Planned Black Development Overlay District, San Diego County

Dear Mr. Madera:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
    d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project.
    b. Recommended mitigation measures.
    c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
       i. Planning and construction to avoid the resources and protect the cultural and natural context.
       ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
       i. Protecting the cultural character and integrity of the resource.
       ii. Protecting the traditional use of the resource.
       iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Katy.Sanchez@nahc.ca.gov.

Sincerely,

for Nancy Gonzalez

Katy Sanchez
Associate Enviromental Planner

cc: State Clearinghouse

NOP Comment #6 - California Department of Transportation

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
PHONE (619) 688-6960
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CITY OF OCEANSIDE
DEVELOPMENT SERVICES

November 30, 2018

11-SD-76
PM 5.023
North River Road Planned Black Development Overlay District
NOP/SCH#2018111034

Mr. Sergio Madera
City of Oceanside
300 North Coast Highway
Oceanside, CA 92054

Dear Mr. Madera:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Notice of Preparation (NOP) for the North River Road Planned Black Development Overlay District Draft Environmental Impact Report (DEIR) located near State Route 76 (SR-76). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Caltrans has the following comments:

Traffic Impact Study

A traffic impact study (TIS) may be necessary for future proposed projects within the overlay district depending upon density and individual projects' ADT.

Early coordination with Caltrans is encouraged. Future project applicant's may contact Caltrans District 11 IGR Branch for early project coordination.

Complete Streets and Mobility Network

Caltrans views all transportation improvements as opportunities to improve safety, access and mobility for all travelers in California and recognizes bicycle, pedestrian and transit modes as integral elements of the transportation system. Caltrans supports improved transit accommodation through the provision of Park and Ride facilities, improved bicycle and pedestrian access and safety improvements, signal prioritization for transit, bus on shoulders, ramp improvements, or other enhancements that promotes a complete and integrated transportation system.

To reduce greenhouse gas emissions and achieve California's Climate Change target, Caltrans is implementing Complete Streets and Climate Change policies into State Highway Operations and Protection Program (SHOPP) projects to meet multi-modal mobility needs. Caltrans looks forward to working with the City to evaluate potential Complete Streets projects.

Land Use and Smart Growth

Caltrans recognizes there is a strong link between transportation and land use. Development can have a significant impact on traffic and congestion on State transportation facilities. In particular, the pattern of land use can affect both local vehicle miles traveled and the number of trips. Caltrans supports collaboration with local agencies to work towards a safe, functional, interconnected, multi-modal transportation system integrated through applicable "smart growth" type land use planning and policies.

The City should continue to coordinate with Caltrans to implement necessary improvements at intersections and interchanges where the agencies have joint jurisdiction, as well as coordinate with Caltrans as development proceeds and funds become available to ensure that the capacity of on-/off-ramps is adequate.

Mitigation

Caltrans endeavors that any direct and cumulative impacts to the State Highway System be eliminated or reduced to a level of insignificance pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) standards.

Mitigation measures to State facilities should be included in TIS/TIA. Mitigation identified in the traffic study, subsequent environmental documents, and mitigation monitoring reports, should be coordinated with Caltrans to identify and implement the appropriate mitigation. This includes the actual implementation and collection of any "fair share" monies, as well as the appropriate timing of the mitigation. Mitigation improvements should be compatible with Caltrans concepts.

Right-of-Way

Any work performed within Caltrans right-of-way (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction. As part of the encroachment permit process, the applicant must provide an approved final environmental document including the California Environmental Quality Act (CEQA) determination addressing any environmental impacts within the Caltrans's R/W, and any corresponding technical studies.

If you have any questions, please contact Kimberly Dodson, of the Caltrans Development Review Branch, at (619) 688-2510 or by e-mail sent to Kimberly.dodson@dot.ca.gov.

Sincerely,

JACOB ARMSTRONG, Branch Chief
Local Development and Intergovernmental Review Branch

NOP Comment #7 - Wittwer Parkin LLP

January 4, 2019

Sent via Email

Sergio Madera, Senior Planner
Planning Division
City of Oceanside
Oceanside, CA 92054
smadera@ci.oceanside.ca.us

Re: North River Road Planned Block Development Overlay District

Dear Mr. Madera:

This law firm represents the Southwest Regional Council of Carpenters (Southwest Carpenters) and submits this letter on the above-referenced project on its behalf.

Southwest Carpenters represents 50,000 union carpenters in six states, including in Southern California, and has a strong interest in ensuring well-ordered land-use planning and reducing the environmental impacts of development projects, such as the North River Road Planned Block Development Overlay District (Project). In its Notice of Preparation, the City of Oceanside (City) has determined the Project has the potential to cause significant impacts on the environment, such that the City will prepare a Draft Environmental Impact Report (DEIR).

The City describes the Project as a change of land use designations that would permit the development of medium-density residential housing of an undisclosed number of units on 25.6 acres. Approvals include:

- General Plan Amendment from Light Industrial to Medium Density – C Residential
- Zone Amendment from Limited Industrial to Medium Density Residential C
- Development Plan to establish a Planned Block Overlay District

The City does not reference the need to obtain any other state and federal approvals, such as a Section 401, 404 and NPDES permits, Endangered Species Act consultation or permit, or a Streambed Alteration Agreement. However, the Project appears to be located next to a stretch of the San Luis Rey River.

Southwest Carpenters presents limited comments in response to the Notice of Preparation, below. We look forward to providing more in-depth comments when the City releases a copy of the DEIR for the Project.

Piecemealing

The City is at risk of piecemealing its environmental review for the Project. Piecemealing occurs where the City submerges consideration of environmental impacts by chopping up a project into smaller ones, thus minimizing the environmental impacts of the Project. (*California Clean Energy Commission v. City of Woodland* (2014) 225 Cal.App.4th 173, 194.)

In its Notice of Preparation, the City states, "Approval of the Project would not include the construction of any buildings or development but would allow for development in the future. Future development plans would be submitted to the City of Oceanside for additional review to ensure that future development within the Project area meets the standards and goals of the City." (NOP, p. 2.) However, there is no reasonable doubt that the Project site is slated for development. As the City is aware, the proposed General Plan Amendment, Zone Change, and Development Plan are requested by two companies interested in developing this property. The approvals suggested are specific to the Project site and cannot be compared to broader, citywide land use changes that may be untethered to any specific plans for development. The sole purpose for this site-specific General Plan Amendment and Zone Change is to develop the Project site, nothing else. These actions, and their intent, are far more than "an optimistic gleam in a [City] planner's eye." (*Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188, 195.) Thus, if the City describes and evaluates the Project as excluding the physical development of the Project site, it is at risk of impermissibly piecemealing its environmental review.

Evaluation of All Environmental Issues

In its DEIR, the City must provide a full analysis of all categories of environmental issues. While the Notice of Preparation suggests the City prepared an Initial Study, City staff has indicated the City did not prepare or circulate an Initial Study. CEQA Guidelines state the City is not required discuss any environmental effects "dismissed in an Initial Study as clearly insignificant." (14 Cal. Code Regs. § 15143.) Here, the City must discuss all topics of environmental impacts required by CEQA in its DEIR, as it has not prepared or circulated an Initial Study.

Agricultural Lands

As the City states in the Notice of Preparation, much of the Project site is currently farmland. In the DEIR, please disclose whether this farmland is identified by the California Department of Conservation as Prime Farmland, Farmland of Statewide Importance, Unique

Farmland, or Farmland of Local Importance, or is the subject of a Williamson Act contract. If loss of this farmland is significant, please consider mitigating this loss by requiring the permanent preservation of farmland either on- or off-site.

Air Quality and Greenhouse Gas

The City must disclose baseline air quality conditions of the Project area. Furthermore, the City must describe the impact the Project would have in comparison to this baseline, including any conflict with any air quality management plan in effect within the air basin. Importantly, the City must accurately describe cumulative air quality impacts in relation to the Project.

Regarding greenhouse gases, the City should quantify baseline greenhouse gas emissions, as well as any new emissions that will be caused by the Project and compare those emissions to a quantitative significance threshold to determine the significance of these impacts. Furthermore, the City should disclose whether it has promulgated a Climate Action Plan and, if so, whether the City is currently on track to meet the reductions goals of its Climate Action Plan, and whether this plan has been updated to reflect the greenhouse reductions from all applicable laws and policies.

The City should include all feasible mitigation to reduce Project air quality and greenhouse gas impacts. Mitigation measures should include:

- requiring the use of Tier-IV-Final off-road vehicles for construction;
- requiring installation of rooftop solar panels;
- installation of electric-vehicle chargers in parking spaces; and
- the purchase of carbon offsets.

Hazards and Hazardous Materials

As the Project site has been historically used for agricultural and industrial purposes, please conduct extensive soil sampling. Older pesticides and industrial uses may have caused contamination that persists today, such that earthwork may expose workers and the River to hazardous substances.

Further, as the Project will include demolition of existing structures, please disclose whether this demolition may pose a health hazard, such as exposure to asbestos and lead-based paints.

The Project is within one-quarter mile of at least one school, Nichols Elementary School. In the DEIR, please evaluate whether the Project has the potential to impact this school by handling or transporting hazardous materials or by creating hazardous emissions, such as diesel particulate matter (DPM).

Hydrology and Water Quality

The Project site straddles a section of the San Luis Rey River (River) and, thus, poses a threat to the River's water quality and flows. In the DEIR, please evaluate the potential of the Project to negatively impact the River and mitigate these impacts to the greatest extent feasible.

Because the Project will be sited directly adjacent to the River, the Project site may also be at risk of flooding or exacerbating a flood hazard. Please also discuss the potential of the Project to place people and structures such that they are at risk of injury, death, or damage.

Conclusion

Southwest Carpenters thanks the City for providing an opportunity to comment on the Notice of Preparation. Pursuant to Section 21092.2 of the Public Resources Code and Section 65092 of the Government Code, Southwest Carpenters request notification of all CEQA actions and notices of any public hearings concerning this Project, including any action taken pursuant to California Planning and Zoning Law. In addition, pursuant to Public Resources Code section 21167(f), please provide a copy of each Notice of Determination issued by the City in connection with this Project and please add Southwest Carpenters to the list of interested parties in connection with this Project and direct all notices to my attention. Please send all notices by email, or if email is unavailable, by U.S. Mail to:

Nicholas Whipps
Ashley McCarroll
Wittwer Parkin LLP
147 S. River St., Ste. 221
Santa Cruz, CA 95060
nwhipps@wittwerparkin.com
amccarroll@wittwerparkin.com

Very truly yours,
WITTWER PARKIN LLP

Nicholas Whipps

NOP Comment #8 - Lawrence Burnett

North River Road Planned Block Development Overlay
Comment on Draft EIR Content

December 4, 2018

Comments Submitted by: Date: 12/4/18

Lawrence Burnett -

(1) Due to the problems with emergency ~~[illegible]~~ egress from the entire surrounding area with the wildfires to the east, any increase in the buildout of the proposed property will result in a SERIOUS human danger.

People and vehicles were backed up trying to comply w/ mandatory evacuation orders; then with voluntary evacuation orders. There are really only 2 areas out - College & Douglas Rd.

Look at the possibility of another bridge over the San Luis Rey that could be a permanent structure. OR construct a bridge that would only be used by emergency personnel & vehicles.

(2) Privacy for the backyards of all of the property on Trinity St. Currently 10' SDGE easement, buffer needs to be increased & limits placed on the height of adjacent buildout to preserve the back yard privacy of current & future owners.

Please return written comments by January 4, 2019 to:
Mr. Sergio Madera
Oceanside Planning Division
300 North Coast Highway
Oceanside, CA 92054
smadera@ci.oceanside.ca.us

Project Representative:
Dan Niebaum (760) 692-1924
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008
dan@lightfootpg.com

NOP Comment #9 - Anonymous Commenter

North River Road Planned Block Development Overlay
Comment on Draft EIR Content

December 4, 2018

Comments Submitted by: Date:

Is there any change to flood protection in the proposal? Dec. 4, 2018

Percentage of applicants satisfied by low-income housing proj project at Mission & Airport Rd. Dec 4, 2018

Please return written comments by January 4, 2019 to:

Mr. Sergio Madera
Oceanside Planning Division
300 North Coast Highway
Oceanside, CA 92054
smadera@ci.oceanside.ca.us

Project Representative:

Dan Niebaum (760) 692-1924
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008
dan@lightfootpg.com

NOP Comment #10 - John and Maria Cofey

North River Road Planned Block Development Overlay
Comment on Draft EIR Content

December 4, 2018

Comments Submitted by: John Cofey and Maria Cofey Date: 12/4/2018

Security issues
Privacy issues (easement behind homes near fence, 2 to 3 story homes - no privacy)
Emergency Egress/exit
Environmental impacts of soil (chemicals)
Parking concerns (cars parking in community; not enough guest parking)
Traffic issues (avenida descanso to Old River Rd)
Health Issues
Air Quality Issues
Greenhouse gas emissions
Noise (all types)
Power/Electricity concerns
Biological Issues/resources
Flood protection - near riverbed
Energy concerns
Will affordable housing be an issue?

Email: thecofeys@cox.net
(I would like a copy of the brief.)

Please return written comments by January 4, 2019 to:

Mr. Sergio Madera
Oceanside Planning Division
300 North Coast Highway
Oceanside, CA 92054
smadera@ci.oceanside.ca.us

Project Representative:

Dan Niebaum (760) 692-1924
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008
dan@lightfootpg.com

APPENDIX B
PHASE I ENVIRONMENTAL SITE ASSESSMENT – EASTERN PARCEL

PHASE I ENVIRONMENTAL SITE ASSESSMENT

4665 N River Road
Oceanside, California 92057

October 6, 2015

Prepared for:

So Cal Ag Properties, Inc.
Attn: Jay Kawano
P.O. Box 4601
Oceanside, California 92052

Prepared by:

Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029-1229

Phone (760) 743-1214
Fax (760) 739-0343

October 6, 2015

So Cal Ag Properties, Inc.
Attn: Jay Kawano
P.O. Box 4601
Oceanside, California 92052

Subject: **Phase I Environmental Site Assessment**
4665 N River Road
Oceanside, California 92057

To Whom It May Concern:

Vinje & Middleton Engineering, Inc. (VM) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society for Testing and Materials Practice (ASTM) E 1527-13 and 40 Code of Federal Regulations (CFR) Part 312, of the above-referenced property. This ESA included public environmental agency and historical record reviews, interviews, site observations, and report preparation. This report includes VM's findings, conclusions, and supporting documentation.

We appreciate the opportunity to be of service to you on this project. If you should have any questions regarding this report, or if we can be of further assistance, please contact us at (760) 743-1214.

Sincerely,

Vinje & Middleton Engineering, Inc.

Ralph M. Vinje
Principal Engineer
RCE #25115

REGISTERED PROFESSIONAL ENGINEER
No. 25115
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

Daniel Weis
Associate Environmental Scientist

TABLE OF CONTENTS

1.0 Executive Summary

1.1 Summary and Findings

At the request of the So Cal Ag Properties, Inc., Vinje & Middleton Engineering, Inc. (VM) conducted a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-13 and 40 Code of Federal Regulations (CFR) Part 312, of the property located at 4665 N River Road in the City of Oceanside, San Diego County, California (hereinafter referred to as "the Site"). The Site is 2.55 acres in size, consists of one legal parcel, and is situated south of N River Road, north of Calle Joven, and west of Calle Montecito. The Site is further identified by County of San Diego Assessor's Parcel Number (APN) 157-060-40-00.

The Site currently includes a packing warehouse with offices, associated storage sheds, a former fruit stand, and a vacant residence. Warehousing activities have slowed and are reportedly being moved to a new facility. The western portion of the Site is mostly vacant and undeveloped. The Site can be accessed from North River Road to the north, and from Calle Joven to the south. The northern portion of the Site surrounding the warehouse is mostly asphalt paved, while the southern portion surrounding the warehouse is mostly concrete paved. No significant environmental concerns were noted during the Site reconnaissance.

VM reviewed historical aerial photographs and topographic maps pertaining to the Site and adjacent properties. In the 1938 and 1946 aerial photographs, the Site appears to be mostly vacant with some agricultural activity evident. A residence is depicted along the eastern Site boundary. In the 1953, 1964, and 1967 aerial photographs, the Site appears to be developed with an additional residence and associated structures in the central portion of the Site along with the agricultural activities. In the 1980, 1989, 1990, 1994, and 1997 aerial photographs, the on-Site structures are depicted in their current configurations with dirt parking surrounding the structures. Agricultural use continues on the western portion of the Site. In the 2002 through 2012 aerial photographs, the Site is depicted in its current configuration with paved areas surrounding the structures.

The Site has historically been utilized for agricultural purposes. During historical agricultural activities throughout the State of California, various pesticides and more specifically organochlorine phosphates (OCPs) were commonly applied during the normal course of agricultural operations. Such compounds have since been banned from production and use in the United States. Section 105215 of the California Health and Safety Code discusses the regulatory reporting of incidents that pertain to pesticide spills and accidental releases of pesticide products. Based on the regulatory and historical research completed during the preparation of this assessment, no information has been revealed that would lead VM to believe that an accidental spill or release of pesticide products has occurred at the Site. In addition, neither stressed vegetation, nor evidence of the storage of pesticides was observed on the property during the Site reconnaissance or based on regulatory and historical research reviews. As such, the historical agricultural use of the Site is not considered to be a recognized environmental condition in connection with the Site. However, to the extent that the client desires information regarding potential agricultural chemical residues in Site soils, sampling and analysis can be conducted.

VM reviewed standard regulatory record sources which included Federal, State and local environmental databases provided by Environmental Data Resources (EDR) for information pertaining to documented and/or suspected releases of regulated hazardous substances and/or petroleum products within specified search distances. The Site is not listed on any of the databases reviewed by EDR. There are multiple properties within the Site vicinity that appear on several of the regulatory databases but are not considered to be environmental concerns to the Site. This opinion is based on several factors, including distance of the properties from the Site, orientation of the properties relative to the Site, depth and flow of groundwater in the area and reported property conditions.

1.2 Conclusions

This assessment has revealed no evidence of recognized environmental conditions in connection with the Site. As stated previously, the historical agricultural use of the Site is not considered to be a recognized environmental condition in connection with the Site. However, to the extent that the client desires information regarding potential agricultural chemical residues in Site soils, sampling and analysis can be conducted.

2.0 Introduction

2.1 Purpose

The purpose of this Phase I ESA is to provide a professional opinion on the presence of recognized environmental conditions and other suspect environmental conditions in connection with the Site, as they existed on the date of the site inspection, and to recommend whether further investigation is required. ASTM Standard Practice E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, specifies minimum requirements for conducting an ESA of a parcel of commercial real estate with respect to the range of contaminants pertinent to the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as petroleum products. As such, this ESA is intended to satisfy one of the threshold criteria for satisfying the landowner liability protections to CERCLA liability assuming compliance with other elements of the defense. In other words, this ESA represents one of the practices that constitute "all appropriate inquiry" into the previous ownership and uses of the property consistent with good commercial or customary practice, as defined in 42 USC Section 9601(35)(B) and 40 CFR Part 312.

The goal of the process is to identify recognized environmental conditions, which are defined by the Practice as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. The term recognized environmental condition includes hazardous substances or petroleum products even under conditions in compliance with laws. In addition, the term also included historical recognized environmental conditions and controlled recognized environmental conditions. A historical recognized environmental condition is defined by the Practice as "a past release of hazardous substances or petroleum products that has occurred in connection with a property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." A controlled recognized environmental condition is defined by the Practice as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." The term recognized environmental condition is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The term "environment" is defined in CERCLA 42 USC 9601(8) as "(A) the navigable waters, the water of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery conservation and Management Act, and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

The term “release” means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes (A) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (B) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (C) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 [42 U.S.C. 2011 et seq.], if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such Act [42 U.S.C. 2210], or, for the purposes of 42 USC 9604 or any other response action, any release of source byproduct, or special nuclear material from any processing site designated under section 7912(a)(1) or 7942(a) of this title, and (D) the normal application of fertilizer.

2.2 Detailed Scope of Services

The Phase I ESA was conducted in accordance with generally accepted Phase I industry standards using ASTM Standard Practice E 1527-13, 40 CFR Part 312 and VM’s Agreement by and between VM and the client. The following services were provided for this assessment:

- A search for environmental liens recorded against the Site.
- An evaluation of standard environmental record sources contained within Federal, State and local environmental databases within specific search distances.
- An evaluation of additional environmental record sources obtained from local regulatory departments/agencies including the County of San Diego Department of Environmental Health (DEH).
- A qualitative evaluation of the physical characteristics of the Site through a review of published topographic, geologic, and hydrogeologic maps; published groundwater data; and area observations to characterize surface water flow in the Site area.
- An evaluation of past Site and adjacent/nearby property uses through a review of historical resources including aerial photographs, topographic maps and city directories.
- A physical inspection of the Site (interior and exterior) conducted to search for conditions indicative of potential environmental concerns including underground storage tanks (USTs), ASTs, associated tank piping; stained soil or pavement, equipment that may contain or have historically contained polychlorinated biphenyls (PCBs), and other potential environmental concerns as defined in the ASTM-2013 standard.
- A physical assessment of indications of past uses and visual observations of adjacent and surrounding properties (from curbside or public spaces) to assess potential impacts to the Site.
- Interviews completed with the client, the Site owner(s) and local regulatory officials.

- The preparation of this report, which includes the findings of the assessment, our opinion (i.e., conclusions) regarding their respective levels of significance, and recommendations, as appropriate.

2.3 Significant Assumptions

This Phase I ESA was conducted in accordance with ASTM guidelines and the terms and conditions of the aforementioned Agreement between VM and the client. No other warranty, express or implied, is made by VM. VM's evaluations, analyses, and opinions should not be taken as representations regarding subsurface conditions or the actual value of the Site. Subsurface conditions may differ from the conditions implied by the surficial observations and the data resources reviewed, and can only be reliably evaluated through intrusive techniques.

Documentation and data provided by the client, designated representatives of the client, other interested third parties, or from the public domain, and referred to in the preparation of this assessment, are assumed to be complete and correct and have been used and referenced with the understanding that VM assumes no responsibility or liability for their accuracy. VM's conclusions are based upon such information and documentation and on our observations of Site conditions, as they existed on the date of the site inspection. Because Site conditions may change significantly over a short period of time and additional data may become available, data reported and conclusions drawn in this report are limited to current conditions and should be considered less reliable with passing time.

2.4 Limitations and Exceptions

Reasonable efforts have been made during this assessment to uncover evidence of USTs, ASTs, ancillary equipment associated with such tanks, and other subsurface structures. "Reasonable efforts" are limited to information gained from visual observation of unobstructed areas, recorded database information held in public record, and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to paving, construction or debris pile storage, or incorrect information from sources.

This investigation was not an environmental compliance audit. While some observations and discussion in this report may address conditions and/or operations that may be regulated, the regulatory compliance of those conditions and/or operations is outside the scope of this investigation. Nothing in this report constitutes a legal opinion or legal advice. For information regarding specific individual or organizational liability, VM recommends consultation with independent legal counsel.

According to 40 CFR Part 312, Standards and Practices for All Appropriate Inquiry: Final Rule, CERCLA liability rests with the owner or operator of a property and not with an environmental professional hired by the prospective landowner and who is not involved with the ownership or operation of the property. This report meets the requirements set forth in 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries; Final Rule. However, in order to qualify for certain landowner liability protections under CERCLA, "Bona Fide Prospective Purchasers, Contiguous Property Owners, and/or Innocent Landowners" must meet additional requirements of CERCLA (42 U.S.C. 9601 (35)(B)).

This ESA does not address non-scope ASTM considerations including asbestos containing materials, radon, lead-based paint, lead in drinking water, wetlands, protected environments and habitat, industrial hygiene concerns, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment) and high voltage power lines.

2.5 Special Terms and Conditions

No special terms and conditions between VM pertinent to the findings of this ESA or methodology used to complete this assessment are noted. In addition, VM does not have a financial interest in the Site.

2.6 User Reliance

This report was prepared for the sole and exclusive use of the client and its financing partners for this project and is not for the use or benefit of, nor may it be relied upon by, any other person or entity for any purpose without the advance written consent of VM and the client. VM makes no representation to any third party except that it has used the degree of care and skill ordinarily exercised by a reasonable prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. No other use or disclosure is intended or authorized by VM. In the preparation of this ESA, VM has used the degree of care and skill ordinarily exercised by a reasonably prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. No other warranties are made, express or implied.

3.0 Site Description

3.1 Location and Legal Description

The Site is located at 4665 N River Road in the City of Oceanside, San Diego County, California (hereinafter referred to as “the Site”). The Site is 2.55 acres in size, consists of one legal parcel, and is situated south of N River Road, north of Calle Joven, and west of Calle Montecito. The Site is further identified by County of San Diego Assessor's Parcel Number (APN) 157-060-40-00. A Vicinity Map and Topographic Map depicting the general location of the Site are included in Section 13.1.

3.2 Site and Vicinity General Characteristics

The general vicinity consists of multi-family and mobile home residences to the north (beyond N River Road), parking and commercial to the east, fallow agricultural land to the west, and a commercial property to the south beyond Calle Joven. Additional details pertaining to the Site and its adjoining properties are provided in the sections below.

3.3 Current Use of the Site

The Site currently includes a packing warehouse with offices, associated storage sheds, a former fruit stand, and a vacant residence. Warehousing activities have slowed and are reportedly being moved to a new facility. The western portion of the Site is mostly vacant and undeveloped.

3.4 Description of Structures, Roads, Other Improvements on the Site

As stated previously, the Site currently includes a packing warehouse with offices, associated storage sheds, a former fruit stand, and a vacant residence. The western portion of the Site is mostly vacant and undeveloped. The Site can be accessed from North River Road to the north, and from Calle Joven to the south. The northern portion of the Site surrounding the warehouse is mostly asphalt paved, while the southern portion surrounding the warehouse is mostly concrete paved. Potable water and sewer service in the area is provided by City of Oceanside. Electrical and natural gas service in the area are provided by San Diego Gas & Electric (SDG&E). A Site Plan is included in Section 13.2. Photographs taken of the Site are included in Section 13.3.

3.5 Current Uses of the Adjoining Properties

The area surrounding the Site consists of public roadways, residential properties and vacant land. VM performed a visual inspection of adjoining properties from adjacent sidewalks and public right-of-ways. The following table identifies the adjacent property uses:

General Direction	Adjoining Property Use
North	N River Road then residential properties and a mobile home park.
South	Calle Joven, then commercial.
East	Parking lot.
West	Residence and fallow agricultural property.

None of the adjoining properties were observed to be a potential environmental concern to the Site based on VM's visual inspection from public right-of-ways.

4.0 User Provided Information

4.1 Title Records

VM was provided with a preliminary title report pertaining to the Site prepared by First American Title Company and dated February 8, 2015. According to the title report, the Site is currently vested in So. Cal. Ag. Properties, Inc., a California Corporation formerly known as Freshpac International, Inc., a California Corporation. No environmentally related liens, deed restrictions or activity and use limitations pertaining to the Site were noted during review of the preliminary title report and research completed with the San Diego County Office of the Assessor. A copy of the title report is included in Section 13.5.

4.2 Environmental Liens or Activity and Use Limitations

The client reportedly has no knowledge of any environmental related liens or activity and use limitations (i.e. engineering or institutional controls) that are related to potential environmental issues at the Site.

4.3 Specialized Knowledge

The client reportedly has no specialized knowledge pertinent to potential recognized environmental conditions at the Site.

4.4 Commonly Known or Reasonably Ascertainable Information

The client was unaware of commonly known or reasonably ascertainable information pertinent to potential recognized environmental conditions at the Site.

4.5 Valuation Reduction for Environmental Issues

As of the date of this report, the client reportedly has no information pertaining to the relationship of the purchase price or approved value to the estimated fair market value of the Sitey that might indicate that significant contamination exists.

4.6 Owner, Property Manager, and Occupant Information

As stated previously, the Site is currently vested in So. Cal. Ag. Properties, Inc. This entity is also considered the Site manager and occupant. .

4.7 Reason for Performing Phase I ESA

VM, as an independent consultancy, has been retained to conduct this Phase I ESA to identify environmental issues that may be present and to comply with 40 CFR Part 312.

5.0 Records Review

5.1 Standard Environmental Record Sources

VM reviewed Federal and State environmental databases provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut for information pertaining to documented and/or suspected releases of regulated hazardous substances and/or petroleum products within specified search distances. A copy of the EDR report is included in Section 13.4.

VM also reviewed unmappable sites listed in the environmental database report by cross-referencing addresses and site names. Unmappable sites are sites that cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be mapped because of inaccurate or missing location information in the record provided by the regulatory agency. Any unmappable sites that VM identifies within the specified search radii were evaluated as part of the preparation of this report.

The following Federal databases related to potential on-site and off-site sources of contamination were reviewed and interpreted by VM:

Federal Databases	Search Distance From Site
National Priorities List (NPL)	One mile
Delisted NPL	One mile
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	One-half mile
CERCLIS No Further Remedial Action Planned (NFRAP)	One-half mile
Resource Conservation and Recovery Act (RCRA) CORRACTS Hazardous Waste Treatment, Storage and Disposal (TSD) Facilities	One mile
Resource Conservation and Recovery Act (RCRA) NON-CORRACTS Hazardous Waste TSD Facilities	One-half mile
RCRA Hazardous Waste Generators (RCRA GEN)	One-eighth mile
Emergency Response Notification System (ERNS)	One-eighth mile
Facility Index Systems (FINDS)	One-eighth mile
Federal Institutional/Engineering Control Registries (IC/EC)	One-half mile

The following State/local databases related to potential on-site and off-site sources of contamination were also searched and reviewed:

State/Local Databases	Search Distance From Site
State Equivalent NPL and CERCLIS (RESPONSE and Envirostor)	One mile
State Voluntary Cleanup Sites (VCP)	One-half mile
State/Local Brownfield Sites and Institutional/Engineering Control Registries	One-half mile
Inactive, Active, and/or Permitted Solid Waste/Landfill Facilities (SWL)	One-half mile
Leaking Underground Storage Tanks (LUST)	One-half mile
Spills, Leaks, Investigations and cleanup (SLIC)	One-half mile
Registered Underground and Aboveground Storage Tanks (UST/AST)	One-eighth mile

State/Local Databases	Search Distance From Site
San Diego County DEH Site Assessment and Mitigation (SAM)	One-half mile

Descriptions/sources of each of the above referenced regulatory databases and the dates these databases were last updated by the applicable regulatory agencies are included in the EDR report.

Subject Site

The Site was not listed in any of the standard regulatory databases searched by EDR.

Adjoining and Nearby Properties

The adjoining properties were not listed in any of the standard regulatory databases searched by EDR within the ASTM specified search distances. Several nearby properties (as summarized below) were identified on the databases searched by EDR.

Listed Property and Address	Database(s)	Mapped Distance and Direction From Site	Details	Likely Concern To Site?
Nagata Bros. Farms 4617 North River Road	UST ERNS	0.054-mile WNW	Referenced with historical USTs. ERNS listing describes an event where lightning reportedly struck a pole mounted transformer resulting in an oil leakage form the transformer onto the field below.	No
Murray Bridge Middle School Frazee Road/Gardenia Street	Envirostor	0.420-mile E	Referenced as a school site with no further action as of 7/2002.	No
Pala West School Pala Road/Douglas Drive	Envirostor	.772-mile SW	Referenced as a school site with no further action as of 7/2003.	No

Non-ASTM Database Reviews

Below is a list of non-ASTM databases searched by EDR and reviewed by VM during the preparation of this assessment. The descriptions of each database and their data release frequency are included in the EDR report, included in Section 13.5.

Local Brownfield Lists
US BROWNFIELDS - A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites
DEBRIS REGION 9 - Torres Martinez Reservation Illegal Dump Site Locations
ODI - Open Dump Inventory
WMUDS/SWAT - Waste Management Unit Database
SWRCY - Recycler Database
HAULERS - Registered Waste Tire Haulers Listing

Local Lists of Hazardous Waste / Contaminated Sites
US CDL - Clandestine Drug Labs
HIST Cal-Sites - Historical Calsites Database
SCH - School Property Evaluation Program
Toxic Pits - Toxic Pits Cleanup Act Sites
CDL - Clandestine Drug Labs
US HIST CDL - National Clandestine Laboratory Register
SD HMMD – San Diego County DEH Hazardous Materials Management Division

Local Land Records
LIENS 2 - CERCLA Lien Information
LIENS - Environmental Liens Listing
DEED - Deed Restriction Listing

Records of Emergency Release Reports
HMIRS - Hazardous Materials Information Reporting System
CHMIRS - California Hazardous Material Incident Report System
LDS - Land Disposal Sites Listing
MCS - Military Cleanup Sites Listing

Other Ascertainable Records
RCRA-NonGen - RCRA - Non Generators
DOT OPS - Incident and Accident Data
DOD - Department of Defense Sites
FUDS - Formerly Used Defense Sites
CONSENT - Superfund (CERCLA) Consent Decrees
ROD - Records Of Decision
UMTRA - Uranium Mill Tailings Sites
MINES - Mines Master Index File
TRIS - Toxic Chemical Release Inventory System
TSCA - Toxic Substances Control Act
FTTSFIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS - FIFRA/TSCA Tracking System Administrative Case Listing
SSTS - Section 7 Tracking Systems
ICIS - Integrated Compliance Information System
PADS - PCB Activity Database System
MLTS - Material Licensing Tracking System
RADINFO - Radiation Information Database
FINDS - Facility Index System/Facility Registry System
RAATS - RCRA Administrative Action Tracking System

RMP - Risk Management Plans
CA BOND EXP. PLAN - Bond Expenditure Plan
UIC - UIC Listing
NPDES - NPDES Permits Listing
Cortese - "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE - Hazardous Waste & Substance Site List
CUPA Listings - CUPA Resources List
Notify 65 - Proposition 65 Records
DRYCLEANERS - Cleaner Facilities
WIP - Well Investigation Program Case List
ENF - Enforcement Action List
HAZNET - Facility and Manifest Data
EMI - Emissions Inventory Data
INDIAN RESERV - Indian Reservations
SCRD DRYCLEANERS - State Coalition for Remediation of Drycleaners Listing
MWMP - Medical Waste Management Program Listing
COAL ASDH DOE – Sleam Electric Plan Operation Data Listing
COAL ASH EPA – Coal Combustion Residues Surface Impoundments List
HWT - Registered Hazardous Waste Transporter Database
HWP - Envirostor Permitted Facilities List
FINANCIAL ASSURANCE - Financial Assurance Information Listing
LEAD SMELTERS - Lead Smelter Sites
2020 COR ACTION - 2020 Corrective Action Program List
US AIRS - Aerometric Information Retrieval System Facility Subsystem
PRP - Potentially Responsible Parties
WDS - Waste Discharge System
EPA WATCH LIST - EPA WATCH LIST
US FIN ASSUR - Financial Assurance Information
PCB TRANSFORMER - PCB Transformer Registration Database
PROC - Certified Processors Database

The Site is not listed is listed on any of the non-ASTM databases searched by EDR with the exception of one CHMIRS listing. There is one other property within the Site vicinity that is listed on the non-ASTM CHMIRS database, and seven properties listed on the San Diego Co. HMMD non-ASTM database. These properties are not expected to have adversely impacted the Site. This opinion is also based on several factors including distance of the off-site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted direction of groundwater flow, and/or regulatory case status information for the two properties as described in the database report.

5.2 Additional Environmental Record Sources

San Diego County Department of Environmental Health (DEH)

No records of releases of hazardous substances or petroleum products pertaining to the Site are on file with the County of San Diego DEH.

5.3 Physical Setting Sources

The following physical setting sources were reviewed to provide information about the topographic, hydrologic, geologic and/or hydrogeologic characteristics of the Site.

5.3.1 Topography and Hydrology

USGS Topographic Quadrangle

The Site is depicted on the USGS topographic map for the 1997 San Luis Rey, California 7.5 minute quadrangle at an elevation of approximately 70 feet above mean sea level. No features of environmental concern are noted on the map. Streets and public roadways bordering the Site are shown in their current configurations.

Hydrology/Storm Water Management

The Site slopes to the south and southwest towards the San Luis Rey River. The Site does not appear to receive significant drainage from off-Site properties.

5.3.2 Geology

The Site lies within the coastal section of the Peninsular Ranges Geomorphic Province; one of 11 physiographic provinces in California recognized by defining features based on geology, faults, topography, and climate. The Peninsular Ranges Province is dominated by a series of northwest-oriented mountain ranges extending from the Baja California peninsula in the south to the Transverse Ranges in the north. The series of mountain ranges are separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault System. Igneous, metamorphic, and sedimentary rocks are all found within the Peninsular Ranges Province. Plutonic (igneous) rocks of the Peninsular Ranges batholith are predominant throughout much of the Province. The batholithic rocks were emplaced during Cretaceous-age orogenic events, and uplifted into the present mountain ranges during the late Tertiary and Quaternary. The coastal section of the Province is underlain by a thick sequence of marine- and terrestrial-derived sedimentary rock units that unconformably overlie basement rocks. Nearly flat marine terraces lie at different elevations throughout the coastal section of the Province as a result of sea floor erosion during marine standstills and subsequent Quaternary faulting and uplift. According to geologic map sources, the northern portion of the Site is underlain at depth by Quaternary terrace deposits, consisting of reddish-brown, poorly bedded, poorly- to moderately indurated sandstone, siltstone and conglomerate. The remainder of the Site is underlain at depth by alluvium and colluvium with unconsolidated silt, clay, sand, and gravel. The Site, as is all of Southern California, is an active seismic area. However, no faults are mapped across the Site.

5.3.3 Hydrogeology

The Site is situated within the Mission Hydrologic Sub-Area of the Lower San Luis Hydrologic Area of the San Luis Rey Hydrologic Unit. Site specific information regarding depth to groundwater and water quality is not available for the Site. However, static groundwater is anticipated to be at depths between 10 to 15-feet below grade. The inferred regional groundwater flow direction is toward the south. According to the California Regional Water Quality Control Board- San Diego Region, groundwater in the area has existing beneficial uses for municipal, agricultural, and industrial supply purposes.

5.4 Historical Use Information on the Subject Site

VM reviewed several historical sources (as described in the following sections) to develop a history of the previous uses of the Site, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Site.

5.4.1 Aerial Photographs and Topographic Maps

Aerial Photographs

VM reviewed historical aerial photographs from the years 1938, 1946, 1953, 1964, 1967, 1980, 1989, 1990, 1994, 1997, 2002, 2003, 2005, 2009, 2010, and 2012 via online resources provided by NETROnline. In the 1938 and 1946 aerial photographs, the Site appears to be mostly vacant with some agricultural activity. A residence is depicted along the eastern Site boundary. In the 1953, 1964, and 1967 aerial photographs, the Site appears to be developed with an additional residence and associated structures in the central portion of the Site and continued agricultural activities. In the 1980, 1989, 1990, 1994, and 1997 aerial photographs, the on-Site structures are depicted in their current configurations with dirt parking surrounding the structures. Agricultural use continues on the western portion of the Site. In the 2002, 2003, 2005, 2009, 2010, and 2012 aerial photographs, the Site is depicted in its current configuration with paved areas surrounding the structures.

The Site has historically been utilized for agricultural purposes. During historical agricultural activities throughout the State of California, various pesticides and more specifically OCPs were commonly applied during the normal course of agricultural operations. Such compounds have since been banned from production and use in the United States. Section 105215 of the California Health and Safety Code discusses the regulatory reporting of incidents that pertain to pesticide spills and accidental releases of pesticide products. Based on the regulatory and historical research completed during the preparation of this assessment, no information has been revealed that would lead VM to believe that an accidental spill or release of pesticide products has occurred at the Site. In addition, neither stressed vegetation, nor evidence of the storage of pesticides was observed on the property during the Site reconnaissance or based on regulatory and historical research reviews. As such, the historical agricultural use of the Site is not considered to be a recognized environmental condition in connection with the Site. However, to the extent that the client desires information regarding potential agricultural chemical residues in Site soils, sampling and analysis can be conducted.

Topographic Maps

VM reviewed historical topographic maps from the years 1893, 1897, 1901, 1906, 1907, 1911, 1920, 1921, 1925, 1929, 1931, 1933, 1939, 1941, 1946, 1947, 1949, 1955, 1961, 1966, 1969, 1971, 1978, and 2000 via online resources provided by NETROnline. The Site is depicted with a single structure at the southeastern corner of the Site on the 1947 through 2000 maps. Additional structures are depicted on Site on the 1969 through 1978 maps. Structures are depicted in their current configuration on the 2000 topographic map.

5.4.2 State of California Division of Oil and Gas Records

According to online resources provided by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources, there are no oil, gas or geothermal wells located on the Site.

5.5 Historical Use Information on Adjoining Properties

VM also reviewed several historical sources (as described in the following sections) to develop a history of the previous uses of adjoining properties and the surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Site.

5.5.1 Aerial Photographs and Topographic Maps

Aerial Photographs

As stated previously, VM reviewed historical aerial photographs from the years 1938, 1946, 1953, 1964, 1967, 1980, 1989, 1990, 1994, 1997, 2002, 2003, 2005, 2009, 2010, and 2012 via online resources provided by NETROnline. In the aerial photographs from 1938 to 1967, adjacent properties are primarily vacant and agricultural land in all directions with a roadway (N River Road) to the north. Scattered residences are depicted in the surrounding area over throughout the years. A commercial structure depicted south of the Site in the 1989 and 1990 aerial photographs, is no longer depicted in the 1994 aerial photograph. Calle Joven and the southern adjacent commercial property are depicted in their current configurations in the 1994 aerial photograph. The eastern adjacent parking lot is depicted in its current configuration in the 1997 aerial photograph. The surrounding area is depicted mostly in its current configuration beginning with the 1997 aerial photograph through 2012, consisting of agricultural land to the west, residential to the north, parking lot and commercial beyond to the east, and commercial to the south. No environmental concerns to the Site relative to adjacent and nearby properties were noted during the historical aerial photograph review.

Topographic Maps

VM reviewed historical topographic maps from the years 1893, 1897, 1901, 1906, 1907, 1911, 1920, 1921, 1925, 1929, 1931, 1933, 1939, 1941, 1946, 1947, 1949, 1955, 1961, 1966, 1969, 1971, 1978, and 2000 via online resources provided by NETROnline. N River Road is depicted along the north of the Site in all topographic maps reviewed, but is labeled as Camp Pendleton Road until 1966. A few scattered structures are depicted in the vicinity on the 1893 through 1947 maps. The San Luis Rey River is depicted nearby to the south of the Site as a seasonal streambed until 1978 and is depicted as an engineered channel on the 2000 topographic map. Much of the surrounding area to the north and west is shaded pink on the 2000 topographic map indicating urban development. Additional structures are depicted adjacent to the west of the Site on the 1969 topographic map. The surrounding area is depicted in its current configuration on the 2000 topographic map. No environmental concerns associated with the surrounding area were noted during the historical topographic map review.

5.5.2 State of California Division of Oil and Gas Records

According to online resources provided by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources, there are no oil, gas or geothermal wells located on adjoining properties of the Site.

6.0 Site Reconnaissance

The objective of the Site reconnaissance was to obtain information indicating the likelihood of recognized environmental conditions in connection with the Site. The reconnaissance was conducted on September 18, 2015 by VM. VM was accompanied by facility personnel during the Site reconnaissance.

6.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of inspecting the Site and walking accessible roads surrounding the Site. VM inspected all exterior and common areas. As stated previously, a Site Plan is included in Section 13.2. Photographs of the Site were taken to document existing Site conditions and several are included and described in Section 13.3.

6.2 General Site Setting

As stated previously, the Site currently includes a packing warehouse with offices, associated storage sheds, a former fruit stand, and a vacant residence. The western portion of the Site is mostly vacant and undeveloped. The Site can be accessed from North River Road to the north and from Calle Joven to the south. The northern portion of the Site surrounding the warehouse is mostly asphalt paved, while the southern portion surrounding the warehouse is mostly concrete paved. Additional details pertaining to the Site and its adjoining properties are provided in the sections below. The general vicinity consists of multi-family and mobile home residences to the north (beyond N River Road), parking and commercial to the east, fallow agricultural land to the west, and commercial properties to the south.

6.3 Site Observations

VM examined accessible areas of the Site for evidence of the following potential environmental concerns:

Conditions	Not Observed or Noted	Observed or Noted	Significant Concern?
Hazardous Substances/Petroleum Products	X		--
Waste Generation/Storage/Disposal	X		--
ASTs		X	No
USTs	X		--
PCB Containing Equipment		X	No
Chemical/Petroleum Odors	X		--
Pools of Liquid	X		--
Floor Drains/Sumps/Wells	X		--
Drums	X		--
Stains or Corrosion	X		--
Unidentified Substance Containers	X		--
Stained Soil or Pavement	X		--
Stressed Vegetation	X		--
Pits, Ponds or Lagoons	X		--
Wastewater Discharges/Disposal Systems	X		--
Septic Systems/Cesspools	X		--
Non-Hazardous Solid Waste Disposal Areas	X		--

Conditions	Not Observed or Noted	Observed or Noted	Significant Concern?
Drinking Water Systems/Water Wells/Other Wells	X		--
Other	X		--

The noted items in the table above are discussed below:

AST

An above ground propane tank was noted at the western area of the Site. The tank appeared to be in good condition with no suspect conditions noted in the area.

PCB Containing Equipment

Three pole mounted transformers were noted on a single utility pole at the northern border of the Site, one pad mounted transformer was noted at the northern border of the Site, and another pad mounted transformer was noted in the central area of the Site. The transformers are owned and maintained by SDGE and are not labeled with regards to PCB content. The transformers appeared to be in good condition with no evidence of leaks, stains or corrosion.

7.0 Interview Information

7.1. Interview With Owner

As stated previously, the Site is currently owned by So. Cal Ag. Properties, Inc. Mr. Jay Kawano, designated owner representative, had no knowledge of environmental concerns in connection with the Site.

7.2 Interview With Site Manager

So. Cal Ag. Properties, Inc. is also considered to be the Site Manager. Please refer to section 7.1 above.

7.3 Interviews With Occupants

So Cal Ag. Properties, Inc., is also considered to be the occupant. Please refer to section 7.1 above.

7.4 Interview With Local Government Official

During the preparation of this assessment, multiple governmental agency representatives were interviewed regarding the availability of public records pertaining to the Site.

7.5 Interview With Others

No other interviews were conducted as a part of this assessment.

8.0 Findings, Opinion and Conclusions

VM has performed a Phase I Environmental Site Assessment, in conformance with the scope and limitations of ASTM Practice E 1527-13 and 40 CFR Part 312 of the 4665 N River Road property in the City of Oceanside, San Diego County, California. Any exceptions to, or deletions from, this practice are described in Section 9.0 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the Site. As stated previously, the historical agricultural use of the Site is not considered to be a recognized environmental condition in connection with the Site. However, to the extent that the client desires information regarding potential agricultural chemical residues in Site soils, sampling and analysis can be conducted.

9.0 Deviations and Data Gaps

No deviations or data gaps as defined in the ASTM-2013 standard were noted during the preparation of this assessment.

10.0 Additional Services

No additional services were conducted by VM as a part of this assessment.

11.0 References

"All Appropriate Inquiry" as necessary to satisfy the defenses available under 42 U.S.C. §§ 9607(b)(3), 9607(r)(1), and 9607(q), relying on definitions provided at 42 U.S.C. §§ 9601(35)(B); and as further explained in 40 CFR §§ 312.1 – 312.31.

ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-13, Published November 2013.

California State Water Resources Control Board, GeoTracker online database: http://www.geotracker.swrcb.ca.gov;

California State Water Resources Control Board, Water Quality Control Plan for the San Diego Basin (9), San Diego, California, Published 1994;

Environmental Data Resources Services, Regulatory Database Report Dated September 8, 2015;

NETROnline, Historical aerial photographs;

State of California Department of Conservation, Division of Oil and Gas and Geothermal Resources: http://www.consrv.ca.gov/DOG/maps/index_map.htm;

USGS topographic map, San Luis Rey, California Quadrangle (1997).

12.0 Signatures and Qualifications of Environmental Professionals

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR 312.10. We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject Site. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

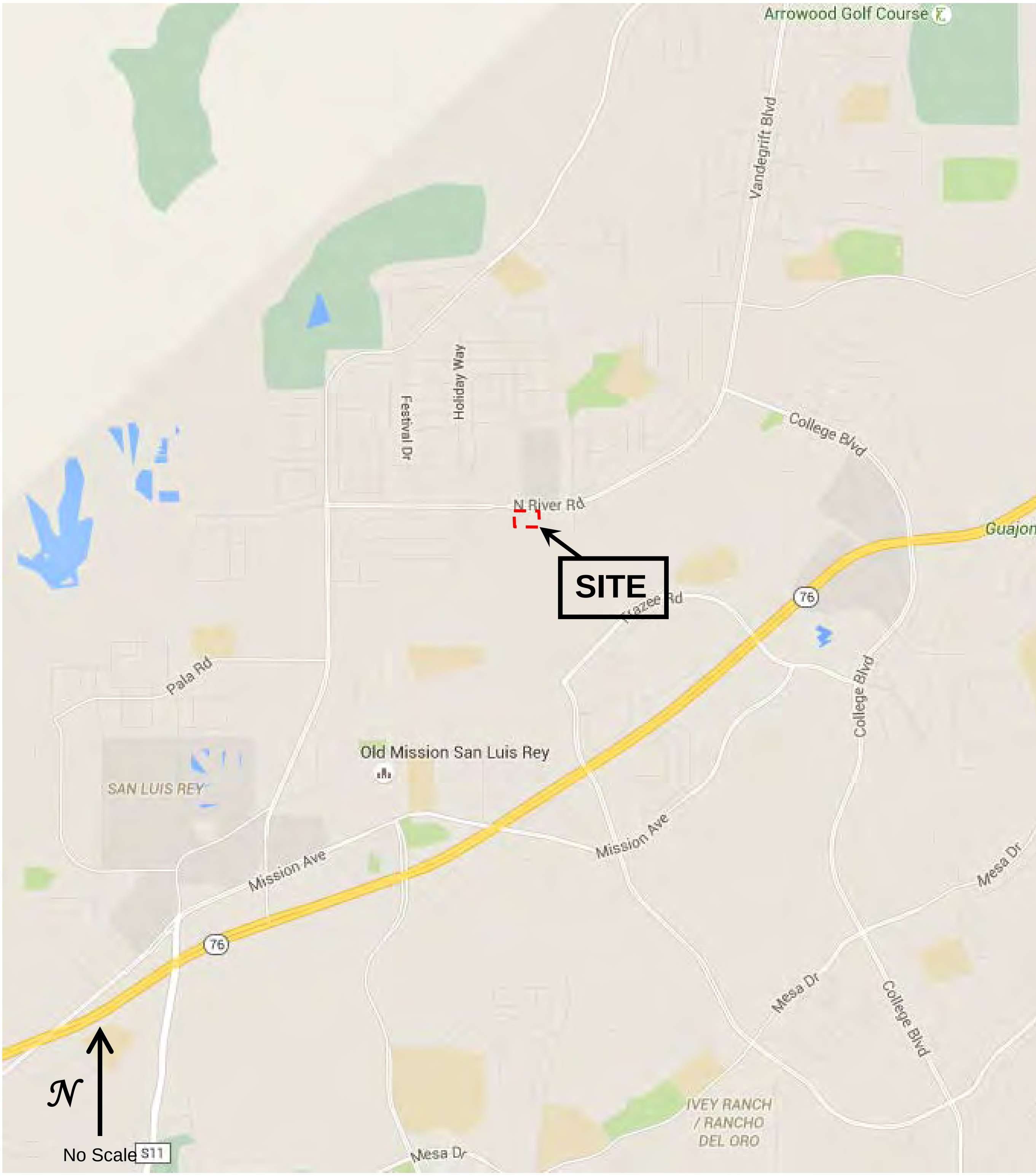
REGISTERED PROFESSIONAL ENGINEER
RALPH MALCOLM VINJE
No. 25115
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

Ralph M. Vinje
Principal Engineer
RCE #25115

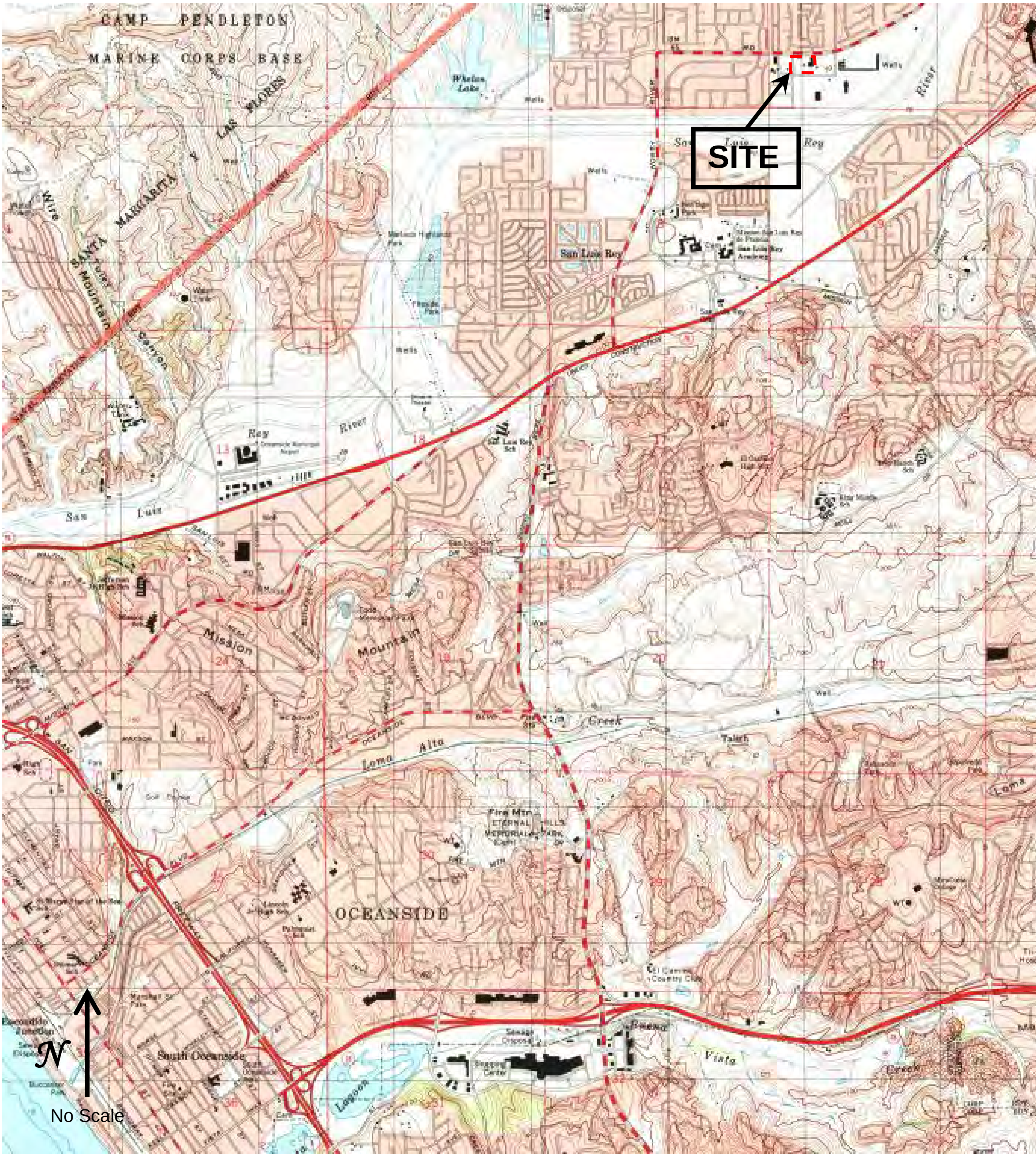
Daniel Weis
Associate Environmental Scientist

13.0 Appendices

13.1 Vicinity Map and Topographic Map



Vinje & Middleton Engineering, Inc. 2450 Auto Park Way Escondido, California 92029	Vicinity Map 4665 N River Road Oceanside, California



Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

Topographic Map
4665 N River Road
Oceanside, California

13.2 Site Plan

Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

Site Plan
4665 N River Road
Oceanside, California

13.3 Site Photographs

1. Southeastern view of the Site.

2. Southern view of the residence on-Site.

3. View of the former produce stand along N River Road.

4. View of the western portion of the Site from the northwest corner.

5. Southern view along the eastern fence line of the Site and eastern adjacent property.

6. Western view along N River Road View from the northeast corner of the Site.

7. Southern view of the eastern adjacent property.

8. Western view along the southern fence line of the Site along Calle Joven.

9. Southern adjacent property.

10. Northern view of the southern Site entrance from Calle Joven.

11. View of the southern portion of the warehouse.

12. View of southwestern portion of the Site.

13. View western portion of the Site.

14. View of northeastern portion of the Site.

15. Western view of the eastern side of the warehouse building.

16. View of the eastern portion of the Site, propane AST depicted.

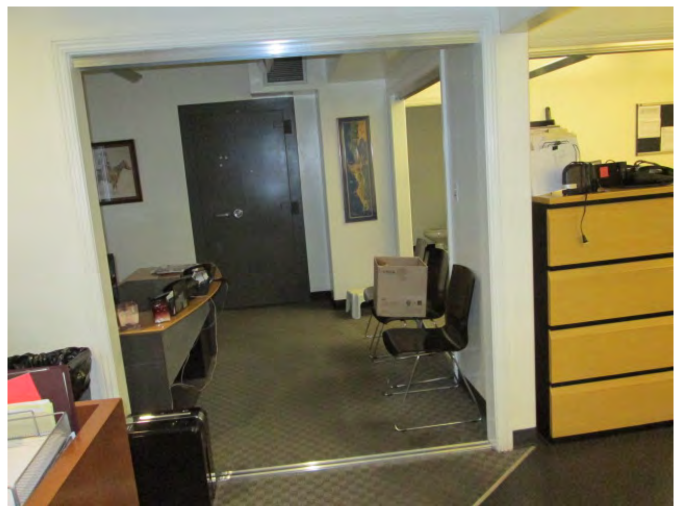
17. Eastern portion of the Site.

18. Shed and pad mounted transformer located west of the main warehouse.

19. Main warehouse interior.

20. Main warehouse interior.

21. Cold storage within the main warehouse.



22. Interior office space.

23. Northern adjacent mobile home park.

24. Northern adjacent townhomes.

13.4 Regulatory Database Report

4665 N River Road
4665 N River Road
Oceanside, CA 92057

Inquiry Number: 4405310.1s
September 08, 2015

The EDR Radius Map™ Report

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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SECTION **PAGE**

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

4665 N RIVER ROAD
OCEANSIDE, CA 92057

COORDINATES

Latitude (North):	33.2446000 - 33˚ 14' 40.56''
Longitude (West):	117.3110000 - 117˚ 18' 39.60''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	471027.4
UTM Y (Meters):	3678255.0
Elevation:	71 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641318 SAN LUIS REY, CA
Version Date:	2012
North Map:	5640252 MORRO HILL, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120519
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
4665 N RIVER ROAD
OCEANSIDE, CA 92057

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1		4665 NORTH RIVER ROA	CHMIRS		TP
A2	HOUSE CALL OIL CHANG	4705 N RIVER RD	San Diego Co. HMMD	Higher	21, 0.004, NE
A3	VISTA COMMUNITY CLIN	4700 N RIVER RD	San Diego Co. HMMD	Higher	30, 0.006, NE
B4	SD AUTO AUCTION INC.	4691 CALLE JOVEN	San Diego Co. HMMD	Higher	130, 0.025, ESE
B5	SD AUTO AUCTION INC	4691 CALLE JOVEN	San Diego Co. HMMD	Higher	130, 0.025, ESE
C6	NAGATA BROS FARM INC	4617 N RIVER RD	San Diego Co. HMMD, HIST UST	Higher	285, 0.054, WNW
C7		4617 NORTH RIVER ROA	ERNS	Higher	285, 0.054, WNW
C8	NAGATA BROS. FARMS	4617 RIVER RD	San Diego Co. HMMD, CHMIRS	Higher	285, 0.054, WNW
9	ROY LADD	4801 N RIVER RD	San Diego Co. HMMD	Higher	316, 0.060, ENE
10	MURRAY BRIDGE MIDDLE	FRAZEE ROAD/GARDENIA	ENVIROSTOR	Higher	2219, 0.420, East
11	PALA WEST SCHOOL	PALA ROAD/DOUGLAS DR	ENVIROSTOR	Lower	3812, 0.722, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
4665 NORTH RIVER ROA 4665 NORTH RIVER ROA OCEANSIDE, CA	CHMIRS OES Incident Number: 15-1162	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR’s search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL - National Priority List
Proposed NPL - Proposed National Priority List Sites
NPL LIENS - Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL - National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY - Federal Facility Site Information listing
CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System

Federal CERCLIS NFRAP site List

CERC-NFRAP - CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS - Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF - RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG - RCRA - Large Quantity Generators

EXECUTIVE SUMMARY

RCRA-SQG - - - - - RCRA - Small Quantity Generators
RCRA-CESQG - - - - - RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS - - - - - Land Use Control Information System
US ENG CONTROLS - - - - - Engineering Controls Sites List
US INST CONTROL - - - - - Sites with Institutional Controls

State- and tribal - equivalent NPL

RESPONSE - - - - - State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF - - - - - Solid Waste Information System

State and tribal leaking storage tank lists

SAN DIEGO CO. SAM - - - - - Environmental Case Listing
LUST - - - - - Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST - - - - - Leaking Underground Storage Tanks on Indian Land
SLIC - - - - - Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST - - - - - Underground Storage Tank Listing
UST - - - - - Active UST Facilities
AST - - - - - Aboveground Petroleum Storage Tank Facilities
INDIAN UST - - - - - Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP - - - - - Voluntary Cleanup Program Properties
INDIAN VCP - - - - - Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS - - - - - Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS - - - - - A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT - - - - - Waste Management Unit Database
SWRCY - - - - - Recycler Database
HAULERS - - - - - Registered Waste Tire Haulers Listing
ODI - - - - - Open Dump Inventory
DEBRIS REGION 9 - - - - - Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL - - - - - National Clandestine Laboratory Register

HIST Cal-Sites ---------------- Historical Calsites Database
SCH ---------------- School Property Evaluation Program
CDL ---------------- Clandestine Drug Labs
Toxic Pits ---------------- Toxic Pits Cleanup Act Sites
US CDL ---------------- Clandestine Drug Labs

Local Lists of Registered Storage Tanks

SWEEPS UST ---------------- SWEEPS UST Listing
CA FID UST ---------------- Facility Inventory Database

Local Land Records

LIENS ---------------- Environmental Liens Listing
LIENS 2 ---------------- CERCLA Lien Information
DEED ---------------- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---------------- Hazardous Materials Information Reporting System
LDS ---------------- Land Disposal Sites Listing
MCS ---------------- Military Cleanup Sites Listing
SPILLS 90 ---------------- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---------------- RCRA - Non Generators / No Longer Regulated
FUDS ---------------- Formerly Used Defense Sites
DOD ---------------- Department of Defense Sites
SCRD DRYCLEANERS ---------------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---------------- Financial Assurance Information
EPA WATCH LIST ---------------- EPA WATCH LIST
2020 COR ACTION ---------------- 2020 Corrective Action Program List
TSCA ---------------- Toxic Substances Control Act
TRIS ---------------- Toxic Chemical Release Inventory System
SSTS ---------------- Section 7 Tracking Systems
ROD ---------------- Records Of Decision
RMP ---------------- Risk Management Plans
RAATS ---------------- RCRA Administrative Action Tracking System
PRP ---------------- Potentially Responsible Parties
PADS ---------------- PCB Activity Database System
ICIS ---------------- Integrated Compliance Information System
FTTS ---------------- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---------------- Material Licensing Tracking System
COAL ASH DOE ---------------- Steam-Electric Plant Operation Data
COAL ASH EPA ---------------- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---------------- PCB Transformer Registration Database
RADINFO ---------------- Radiation Information Database
HIST FTTS ---------------- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---------------- Incident and Accident Data
CONSENT ---------------- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---------------- Indian Reservations
UMTRA ---------------- Uranium Mill Tailings Sites
LEAD SMELTERS ---------------- Lead Smelter Sites

EXECUTIVE SUMMARY

US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal ERNS list

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 03/30/2015 has revealed that there is 1 ERNS site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	4617 NORTH RIVER ROA	WNW 0 - 1/8 (0.054 mi.)	C7	21

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/03/2015 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURRAY BRIDGE MIDDLE Facility Id: 37010029 Status: No Further Action	***FRAZEE ROAD/GARDENIA***	***E 1/4 - 1/2 (0.420 mi.)***	***10***	***25***

Lower Elevation	Address	Direction / Distance	Map ID	Page
PALA WEST SCHOOL Facility Id: 37010026 Status: No Further Action	***PALA ROAD/DOUGLAS DR***	***SW 1/2 - 1 (0.722 mi.)***	***11***	***27***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

San Diego Co. HMMD: The Hazardous Materials Management Division Database comes from the Hazardous Materials Management Division.

A review of the San Diego Co. HMMD list, as provided by EDR, and dated 09/23/2013 has revealed that there are 7 San Diego Co. HMMD sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HOUSE CALL OIL CHANG Facility ID: 137631	4705 N RIVER RD	NE 0 - 1/8 (0.004 mi.)	A2	9
VISTA COMMUNITY CLIN Facility ID: 202594	4700 N RIVER RD	NE 0 - 1/8 (0.006 mi.)	A3	10
SD AUTO AUCTION INC.	***4691 CALLE JOVEN***	***ESE 0 - 1/8 (0.025 mi.)***	***B4***	***13***

Facility ID: 208015				
SD AUTO AUCTION INC Facility ID: 133105	***4691 CALLE JOVEN***	***ESE 0 - 1/8 (0.025 mi.)***	***B5***	***15***
NAGATA BROS FARM INC Facility ID: 199374	***4617 N RIVER RD***	***WNW 0 - 1/8 (0.054 mi.)***	***C6***	***20***
NAGATA BROS. FARMS Facility ID: 120768	***4617 RIVER RD***	***WNW 0 - 1/8 (0.054 mi.)***	***C8***	***21***
ROY LADD Facility ID: 134729 Facility ID: 204183	4801 N RIVER RD	ENE 0 - 1/8 (0.060 mi.)	9	24

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAGATA BROS FARM INC Facility Id: 00000049312	***4617 N RIVER RD***	***WNW 0 - 1/8 (0.054 mi.)***	***C6***	***20***

Records of Emergency Release Reports

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 06/15/2015 has revealed that there is 1 CHMIRS site within approximately 0.125 miles of the target property.

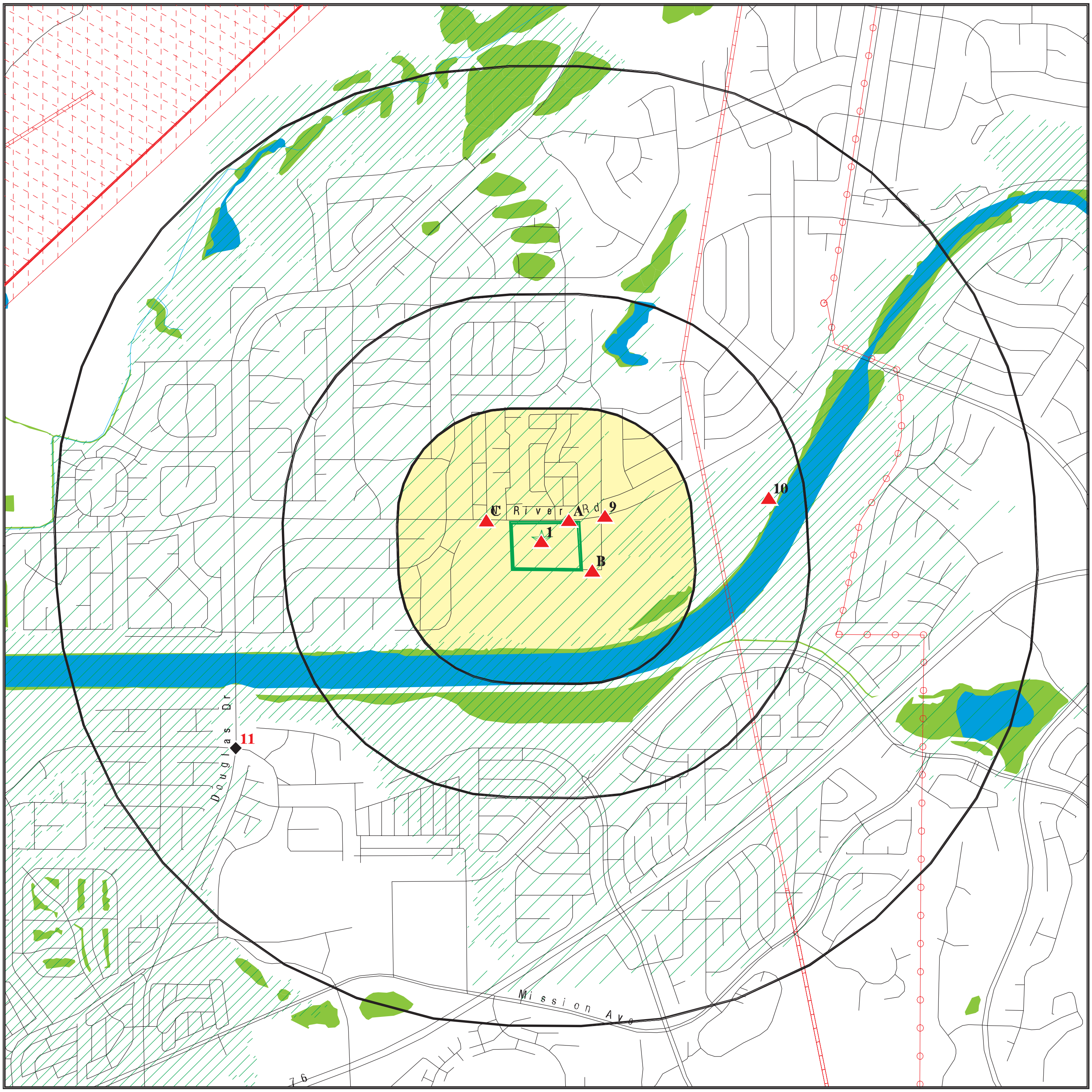
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAGATA BROS. FARMS OES Incident Number: 10-1568	***4617 RIVER RD***	***WNW 0 - 1/8 (0.054 mi.)***	***C8***	***21***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
N RIVER RD 1 000 SLY COLLEGE	NPDES
FRESH & EASY NEIGHBORHOOD MARKET #	San Diego Co. HMMD

OVERVIEW MAP - 4405310.1S



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
National Priority List Sites
Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA
Power transmission lines
Pipelines
100-year flood zone
500-year flood zone
National Wetland Inventory

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 4665 N River Road ADDRESS: 4665 N River Road Oceanside CA 92057 LAT/LONG: 33.2446 / 117.311	CLIENT: Advantage Env. Consultants LLC CONTACT: Keith Sy INQUIRY #: 4405310.1s DATE: September 08, 2015 7:04 pm

DETAIL MAP - 4405310.1S

Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Sensitive Receptors
National Priority List Sites
Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA
Pipelines
100-year flood zone
500-year flood zone
National Wetland Inventory

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	4665 N River Road	CLIENT:	Advantage Env. Consultants LLC
ADDRESS:	4665 N River Road	CONTACT:	Keith Sy
	Oceanside CA 92057	INQUIRY #:	4405310.1s
LAT/LONG:	33.2446 / 117.311	DATE:	September 08, 2015 7:06 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	TP		NR	NR	NR	NR	NR	0
CERCLIS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.125		0	NR	NR	NR	NR	0
RCRA-SQG	0.125		0	NR	NR	NR	NR	0
RCRA-CESQG	0.125		0	NR	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	TP		NR	NR	NR	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.125		1	NR	NR	NR	NR	1
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	1	NR	2
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
SAN DIEGO CO. SAM	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	TP		NR	NR	NR	NR	NR	0
UST	0.125		0	NR	NR	NR	NR	0
AST	0.125		0	NR	NR	NR	NR	0
INDIAN UST	0.125		0	NR	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	TP		NR	NR	NR	NR	NR	0
SWRCY	TP		NR	NR	NR	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
ODI	TP		NR	NR	NR	NR	NR	0
DEBRIS REGION 9	TP		NR	NR	NR	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
San Diego Co. HMMD	0.125		7	NR	NR	NR	NR	7
Toxic Pits	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.125		0	NR	NR	NR	NR	0
HIST UST	0.125		1	NR	NR	NR	NR	1
CA FID UST	0.125		0	NR	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	0.125	1	1	NR	NR	NR	NR	2
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	0.500		0	0	0	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.125		0	NR	NR	NR	NR	0
FUDS	TP		NR	NR	NR	NR	NR	0
DOD	TP		NR	NR	NR	NR	NR	0
SCRD DRYCLEANERS	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
UMTRA	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	TP		NR	NR	NR	NR	NR	0
Cortese	TP		NR	NR	NR	NR	NR	0
CUPA Listings	0.125		0	NR	NR	NR	NR	0
DRYCLEANERS	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	TP		NR	NR	NR	NR	NR	0
HWP	TP		NR	NR	NR	NR	NR	0
HWT	TP		NR	NR	NR	NR	NR	0
MINES	TP		NR	NR	NR	NR	NR	0
MWMP	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	TP		NR	NR	NR	NR	NR	0
Notify 65	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	TP		NR	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.500		0	0	0	NR	NR	0
RGA LUST	0.500		0	0	0	NR	NR	0
- Totals --		1	10	0	1	1	0	13

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **Target** **Property**	**4665 NORTH RIVER ROAD** **OCEANSIDE, CA**	**CHMIRS**	**S117743084** **N/A**

Actual:
71 ft.

CHMIRS:

OES Incident Number:	15-1162
OES notification:	02/27/2015
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Road
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Type:	SEWAGE
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1706
Year:	2015
Agency:	City of Oceanside
Incident Date:	2015-02-27 00:00:00
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Sewage
Quantity Released:	1, 410
Unknown:	Not reported

(Continued) **S117743084**

Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	No
#2 Pipeline:	No
#3 Pipeline:	No
#1 Vessel >= 300 Tons:	No
#2 Vessel >= 300 Tons:	No
#3 Vessel >= 300 Tons:	No
Evacs:	No
Injuries:	No
Fatals:	No
Comments:	Not reported
Description:	A grease blockage in a city mainline caused the release to a field. Approximately 1,200 gallons was recovered, the remaining 210 gallons soaked into the ground and is unrecoverable.

A2 **HOUSE CALL OIL CHANGE** **San Diego Co. HMMD** **S106065340**
NE **4705 N RIVER RD** **N/A**
< 1/8 **OCEANSIDE, CA 92057**
0.004 mi.
21 ft. **Site 1 of 2 in cluster A**

Relative:
Higher

Actual:
71 ft.

SAN DIEGO CO. HMMD:

Facility Id:	137631
Business Type:	6HK26
EPA Id Number:	Not reported
APN:	DEH-137631
Last HMMD Inspection:	06/21/1999
Permit Status:	INAC
Permit Expiration:	06/21/1999
Facility Owner:	GORO & KAYOKO J. HAMASAKI
Facility Address:	4705 N RIVER RD GT 100
Facility City:	OCEANSIDE
Facility State:	CA
Facility Zip:	92057-
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

A3 **VISTA COMMUNITY CLINIC** **San Diego Co. HMMD** **S106072521**
NE **4700 N RIVER RD** **N/A**
< 1/8 **OCEANSIDE, CA 92057**
0.006 mi.
30 ft. **Site 2 of 2 in cluster A**

Relative:
Higher

Actual:
71 ft.

SAN DIEGO CO. HMMD:

Facility Id:	202594
Business Type:	6HK10
EPA Id Number:	Not reported
APN:	157-060-41-00
Last HMMD Inspection:	04/13/2011
Permit Status:	OPEN
Permit Expiration:	03/31/2013
Facility Owner:	VISTA COMMUNITY CLINIC
Facility Address:	1000 VALE TERRACE
Facility City:	VISTA
Facility State:	CA
Facility Zip:	92084
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	N

Inactive Permits:

Facility Id:	202594
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 901 INFECTIOUS WASTE, GENERAL
Other Information:	Not reported
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	202594
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 902 INFECTIOUS WASTE, SHARPS
Other Information:	Not reported
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Violations Active Permits:

Facility Id:	202594
Update Date:	11/02/2012
Inspection Date:	09/06/2006
Violation Code:	6HV4307
Violation:	SQG:RED BAGS > 7 DAYS AT >0C ROOM TEMP
Violation Citation:	Storage time exceeded for red bag waste, stored greater than 7 days at greater than 0C room temperature (for generators of >20 pounds/month). 118280(d)(1)(A)
Activity:	ACTIVE

Facility Id:	202594

VISTA COMMUNITY CLINIC (Continued) **S106072521**

Business Type: 6HK10
EPA Id Number: Not reported
APN: 157-060-41-00
Last HMMD Inspection: 04/13/2011
Permit Status: OPEN
Permit Expiration: 03/31/2013
Facility Owner: VISTA COMMUNITY CLINIC
Facility Address: 1000 VALE TERRACE
Facility City: VISTA
Facility State: CA
Facility Zip: 92084
UST Owner: Not reported
Handle Regulated Hazmat: Not reported
Own Or Operate UST: Not reported
Subject To APSA: Not reported
Generate Haz Waste: Y
Treat Haz Waste: Not reported
Generate Medical Waste: Not reported

Inactive Permits:
Facility Id: 202594
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 901 INFECTIOUS WASTE, GENERAL
Other Information: Not reported
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Facility Id: 202594
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 902 INFECTIOUS WASTE, SHARPS
Other Information: Not reported
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Violations Active Permits:
Facility Id: 202594
Update Date: 11/02/2012
Inspection Date: 09/06/2006
Violation Code: 6HV4307
Violation: SQG:RED BAGS > 7 DAYS AT >0C ROOM TEMP
Violation Citation: Storage time exceeded for red bag waste, stored greater than 7 days at greater than 0C room temperature (for generators of >20 pounds/month). 118280(d)(1)(A)
Activity: ACTIVE

Facility Id: 202594
Business Type: 6HK10
EPA Id Number: Not reported
APN: 157-060-41-00
Last HMMD Inspection: 04/13/2011
Permit Status: OPEN
Permit Expiration: 03/31/2013

VISTA COMMUNITY CLINIC (Continued) **S106072521**

Facility Owner: VISTA COMMUNITY CLINIC
Facility Address: 1000 VALE TERRACE
Facility City: VISTA
Facility State: CA
Facility Zip: 92084
UST Owner: Not reported
Handle Regulated Hazmat: Not reported
Own Or Operate UST: Not reported
Subject To APSA: Not reported
Generate Haz Waste: N
Treat Haz Waste: Not reported
Generate Medical Waste: Y

Inactive Permits:
Facility Id: 202594
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 901 INFECTIOUS WASTE, GENERAL
Other Information: Not reported
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Facility Id: 202594
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 902 INFECTIOUS WASTE, SHARPS
Other Information: Not reported
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Violations Active Permits:
Facility Id: 202594
Update Date: 11/02/2012
Inspection Date: 09/06/2006
Violation Code: 6HV4307
Violation: SQG:RED BAGS > 7 DAYS AT >0C ROOM TEMP
Violation Citation: Storage time exceeded for red bag waste, stored greater than 7 days at greater than 0C room temperature (for generators of >20 pounds/month). 118280(d)(1)(A)
Activity: ACTIVE

Facility Id: 202594
Business Type: 6HK10
EPA Id Number: Not reported
APN: 157-060-41-00
Last HMMD Inspection: 04/13/2011
Permit Status: OPEN
Permit Expiration: 03/31/2013
Facility Owner: VISTA COMMUNITY CLINIC
Facility Address: 1000 VALE TERRACE
Facility City: VISTA
Facility State: CA
Facility Zip: 92084
UST Owner: Not reported

VISTA COMMUNITY CLINIC (Continued) **S106072521**

Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Inactive Permits:

Facility Id:	202594
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 901 INFECTIOUS WASTE, GENERAL
Other Information:	Not reported
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	202594
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 902 INFECTIOUS WASTE, SHARPS
Other Information:	Not reported
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Violations Active Permits:

Facility Id:	202594
Update Date:	11/02/2012
Inspection Date:	09/06/2006
Violation Code:	6HV4307
Violation:	SQG:RED BAGS > 7 DAYS AT >0C ROOM TEMP
Violation Citation:	Storage time exceeded for red bag waste, stored greater than 7 days at greater than 0C room temperature (for generators of >20 pounds/month). 118280(d)(1)(A)
Activity:	ACTIVE

Click this hyperlink while viewing on your computer to access additional CA_HMMD: detail in the EDR Site Report.

B4 **SD AUTO AUCTION INC.** **San Diego Co. HMMD** **S100944139**
ESE **4691 CALLE JOVEN** **N/A**
< 1/8 **OCEANSIDE, CA 92057**
0.025 mi.
130 ft. **Site 1 of 2 in cluster B**

Relative: Higher

Actual: 71 ft.

SAN DIEGO CO. HMMD:

Facility Id:	208015
Business Type:	6HK30
EPA Id Number:	Not reported
APN:	157-060-45-00
Last HMMD Inspection:	08/16/2010
Permit Status:	OPEN
Permit Expiration:	09/30/2013
Facility Owner:	ATD OF CALIFORNIA, INC
Facility Address:	P O BOX 751778
Facility City:	LAS VEGAS

SD AUTO AUCTION INC. (Continued) **S100944139**

Facility State:	NV
Facility Zip:	89136
UST Owner:	Not reported
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	N
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Active Permits:

Facility Id:	208015
Update Date:	11/02/2012
Case Number:	67-63-0
Name:	ISOPROPANOL
Other Information:	RTU GLASS CLEANER
Material Waste:	Material
Hazardous Categories 1:	ACUTE
Hazardous Categories 2:	Not reported

Facility Id:	208015
Update Date:	11/02/2012
Case Number:	Not reported
Name:	CAR BRITE AUTION WHEEL CLEANER
Other Information:	Not reported
Material Waste:	Material
Hazardous Categories 1:	REACTIVE
Hazardous Categories 2:	ACUTE

Facility Id:	208015
Update Date:	11/02/2012
Case Number:	Not reported
Name:	NAPHTHA
Other Information:	ALL SOL & BRITE SHINE
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE

Facility Id:	208015
Update Date:	11/02/2012
Case Number:	Not reported
Name:	SODIUM METASILICATE
Other Information:	EXTRACTOR H.D.
Material Waste:	Material
Hazardous Categories 1:	REACTIVE
Hazardous Categories 2:	ACUTE

Facility Id:	208015
Update Date:	11/02/2012
Case Number:	533-696-0
Name:	SESQUICARBONATE
Other Information:	LAUNDRY SOAP D002X CAR SOAP BLUE MAX
Material Waste:	Material
Hazardous Categories 1:	ACUTE
Hazardous Categories 2:	CHRONIC

B5 **SD AUTO AUCTION INC** **San Diego Co. HMMD** **S105113036**
ESE **4691 CALLE JOVEN** **N/A**
< 1/8 **OCEANSIDE, CA 92057**
0.025 mi.
130 ft. **Site 2 of 2 in cluster B**

Relative: **Higher**

Actual: **71 ft.**

SAN DIEGO CO. HMMD:

Facility Id:	133105
Business Type:	6HK31
EPA Id Number:	CAL000202992
APN:	157-060-45-00
Last HMMD Inspection:	08/16/2010
Permit Status:	OPEN
Permit Expiration:	03/31/2013
Facility Owner:	MANHEIM'S SD AUTO AUCTION INC
Facility Address:	4691 CALLE JOVEN
Facility City:	OCEANSIDE
Facility State:	CA
Facility Zip:	92057-
UST Owner:	Not reported
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Not reported
Subject To APSA:	Y
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Active Permits:

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 888 USED OIL FILTERS
Other Information:	USED OIL FILTERS
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	8002-05-9
Name:	PETROLEUM OIL
Other Information:	Not reported
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL: GENERATOR (2-400 GAL TANKS)
Other Information:	OIL#2
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	CHRONIC

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 342 ORGANIC LIQUIDS W/METALS
Other Information:	ANTIFREEZE

SD AUTO AUCTION INC (Continued) **S105113036**

Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 444 USED BATTERIES
Other Information:	USED BATTERIES
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 461 PAINT SLUDGE
Other Information:	PAINT WASTE/PAINT THINNER
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 461 PAINT SLUDGE SOLID
Other Information:	SOLID PAINT WASTE: CANS
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 221 WASTE OIL & MIXED OIL
Other Information:	WASTE OIL 185G. TANK
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 222 OIL/WATER SEPARATION SLUDGE
Other Information:	SUMP SLUDGE
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Violations Active Permits:

Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	04/01/2004
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2);

SD AUTO AUCTION INC (Continued) **S105113036**

	66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	04/01/2004
Violation Code:	6HV0401
Violation:	TRAINING RECORDS UNAVAILABLE
Violation Citation:	Personnel training records are not maintained to document compliance with requirements for current and former employees. CCR 66265.16(d)&(e)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	11/17/2005
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	04/01/2004
Violation Code:	6HV0402
Violation:	TRAINING PROGRAM NOT ADEQUATE
Violation Citation:	Personnel training is not adequate to ensure compliance with hazardous waste regulations. CCR 66265.16(a)&(b)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	11/17/2005
Violation Code:	6HV0201
Violation:	WASTE CONTAINER NOT CLOSED
Violation Citation:	Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity:	ACTIVE

Facility Id:	133105
Business Type:	6HK31
EPA Id Number:	CAL000202992
APN:	157-060-45-00
Last HMMD Inspection:	08/16/2010
Permit Status:	OPEN
Permit Expiration:	03/31/2013
Facility Owner:	MANHEIM'S SD AUTO AUCTION INC
Facility Address:	4691 CALLE JOVEN
Facility City:	OCEANSIDE
Facility State:	CA
Facility Zip:	92057-
UST Owner:	Not reported
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Not reported

SD AUTO AUCTION INC (Continued) **S105113036**

Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Active Permits:

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 888 USED OIL FILTERS
Other Information:	USED OIL FILTERS
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	8002-05-9
Name:	PETROLEUM OIL
Other Information:	Not reported
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL: GENERATOR (2-400 GAL TANKS)
Other Information:	OIL#2
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	CHRONIC

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 342 ORGANIC LIQUIDS W/METALS
Other Information:	ANTIFREEZE
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 444 USED BATTERIES
Other Information:	USED BATTERIES
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

Facility Id:	133105
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 461 PAINT SLUDGE
Other Information:	PAINT WASTE/PAINT THINNER
Material Waste:	Waste
Hazardous Categories 1:	Not reported

SD AUTO AUCTION INC (Continued) **S105113036**

Hazardous Categories 2: Not reported

Facility Id: 133105
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 461 PAINT SLUDGE SOLID
Other Information: SOLID PAINT WASTE: CANS
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Facility Id: 133105
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 221 WASTE OIL & MIXED OIL
Other Information: WASTE OIL 185G. TANK
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Facility Id: 133105
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 222 OIL/WATER SEPARATION SLUDGE
Other Information: SUMP SLUDGE
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Violations Active Permits:

Facility Id: 133105
Update Date: 11/02/2012
Inspection Date: 04/01/2004
Violation Code: 6HV0202
Violation: WASTE CONTAINER W/O LABELS
Violation Citation: Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity: ACTIVE

Facility Id: 133105
Update Date: 11/02/2012
Inspection Date: 04/01/2004
Violation Code: 6HV0401
Violation: TRAINING RECORDS UNAVAILABLE
Violation Citation: Personnel training records are not maintained to document compliance with requirements for current and former employees. CCR 66265.16(d)&(e)
Activity: ACTIVE

Facility Id: 133105
Update Date: 11/02/2012
Inspection Date: 11/17/2005
Violation Code: 6HV0202
Violation: WASTE CONTAINER W/O LABELS
Violation Citation: Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2);

SD AUTO AUCTION INC (Continued) **S105113036**

	66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	04/01/2004
Violation Code:	6HV0402
Violation:	TRAINING PROGRAM NOT ADEQUATE
Violation Citation:	Personnel training is not adequate to ensure compliance with hazardous waste regulations. CCR 66265.16(a)&(b)
Activity:	ACTIVE
Facility Id:	133105
Update Date:	11/02/2012
Inspection Date:	11/17/2005
Violation Code:	6HV0201
Violation:	WASTE CONTAINER NOT CLOSED
Violation Citation:	Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity:	ACTIVE

C6
WNW
< 1/8
0.054 mi.
285 ft.

NAGATA BROS FARM INC
4617 N RIVER RD
OCEANSIDE, CA 92057

San Diego Co. HMMD **U001572184**
HIST UST **N/A**

Site 1 of 3 in cluster C

Relative:
Higher

Actual:
71 ft.

SAN DIEGO CO. HMMD:

Facility Id:	199374
Business Type:	6HKAG
EPA Id Number:	Not reported
APN:	DEH-199374
Last HMMD Inspection:	10/18/2010
Permit Status:	EXEM
Permit Expiration:	07/26/2002
Facility Owner:	NAGATA BROS FARM INC
Facility Address:	P O BOX 220
Facility City:	SAN LUIS REY
Facility State:	CA
Facility Zip:	92068-0220
UST Owner:	Not reported
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

HIST UST:

Region:	STATE
Facility ID:	00000049312
Facility Type:	Other
Other Type:	FARM
Contact Name:	GEORGE NAGATA
Telephone:	6197571382
Owner Name:	NAGATA BROS. FARMS

NAGATA BROS FARM INC (Continued) **U001572184**

Owner Address:	4617 N. RIVER ROAD
Owner City,St,Zip:	SAN LUIS REY, CA 92068
Total Tanks:	0003
Tank Num:	001
Container Num:	N-1
Year Installed:	1978
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Visual
Tank Num:	002
Container Num:	N-2
Year Installed:	Not reported
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual
Tank Num:	003
Container Num:	N-3
Year Installed:	1978
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual

C7
WNW **4617 NORTH RIVER ROAD**
< 1/8 **OCEANSIDE, CA**
0.054 mi.
285 ft. **Site 2 of 3 in cluster C**

ERNS **2010933023**
N/A

Relative:
Higher

Actual:
71 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

C8
WNW **NAGATA BROS. FARMS**
< 1/8 **4617 RIVER RD**
0.054 mi. **OCEANSIDE, CA 92057**
285 ft. **Site 3 of 3 in cluster C**

San Diego Co. HMMD **S106061767**
CHMIRS **N/A**

Relative:
Higher

Actual:
71 ft.

SAN DIEGO CO. HMMD:

Facility Id:	120768
Business Type:	6HK03
EPA Id Number:	Not reported
APN:	DEH-120768
Last HMMD Inspection:	Not reported
Permit Status:	INAC
Permit Expiration:	Not reported
Facility Owner:	NAGATA BROS. FARMS
Facility Address:	P.O. BOX 0
Facility City:	SAN LUIS REY

NAGATA BROS. FARMS (Continued) **S106061767**

Facility State:	CA
Facility Zip:	92068-0220
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

UST:

UST Name:	UNDERGROUND TANK 120768 T001
Last Update:	2012-11-02 14:17:38
Permit Number:	120768
Tank Type:	SINGLE WALL
Additional Id:	N-1
Capacity Gallons:	1000
UST Contents:	LEADED
Other Content Info:	LEADED
Reg Status:	EXEMPT
Remove Close Date:	Not reported
Year Installed:	1978-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	24
UST Monitor Method:	VISUAL MONITORING: DAILY (MINIMUM) LOG OF INSPECTIONS

UST Name:	UNDERGROUND TANK 120768 T002
Last Update:	2012-11-02 14:17:38
Permit Number:	120768
Tank Type:	UNKNOWN
Additional Id:	N-2
Capacity Gallons:	550
UST Contents:	LEADED
Other Content Info:	LEADED
Reg Status:	EXEMPT
Remove Close Date:	Not reported
Year Installed:	Not reported
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	24
UST Monitor Method:	VISUAL MONITORING: DAILY (MINIMUM) LOG OF INSPECTIONS

UST Name:	UNDERGROUND TANK 120768 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	120768
Tank Type:	UNKNOWN
Additional Id:	N-3
Capacity Gallons:	10000
UST Contents:	LEADED
Other Content Info:	LEADED
Reg Status:	EXEMPT
Remove Close Date:	Not reported
Year Installed:	1978-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	24
UST Monitor Method:	VISUAL MONITORING: DAILY (MINIMUM) LOG OF INSPECTIONS

NAGATA BROS. FARMS (Continued) **S106061767**

CHMIRS:

OES Incident Number:	10-1568
OES notification:	03/04/2010
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Residence
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1500
Year:	2010
Agency:	San Diego Gas & Electric
Incident Date:	3/4/2010
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	mineral oil, UNK PCB
Quantity Released:	25
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported

NAGATA BROS. FARMS (Continued) **S106061767**

#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	RP States: A pole mounted transformer released the material due to a malfunction.

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9 **ENE** **< 1/8** **0.060 mi.** **316 ft.**	**ROY LADD** **4801 N RIVER RD** **OCEANSIDE, CA 92057**	**San Diego Co. HMMD**	**S101102098** **N/A**

Relative:
Higher

Actual:
79 ft.

SAN DIEGO CO. HMMD:

Facility Id:	204183
Business Type:	6HK18
EPA Id Number:	Not reported
APN:	DEH-134729
Last HMMD Inspection:	02/06/2012
Permit Status:	OPEN
Permit Expiration:	01/31/2013
Facility Owner:	CITY OF OCEANSIDE WATER UTILITIES
Facility Address:	300 N COAST HIGHWAY
Facility City:	OCEANSIDE
Facility State:	CA
Facility Zip:	92054
UST Owner:	Not reported
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Active Permits:

Facility Id:	204183
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	Not reported
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	CHRONIC

Facility Id:	134729
Business Type:	6HK70
EPA Id Number:	Not reported
APN:	DEH-134729
Last HMMD Inspection:	10/17/1995
Permit Status:	INAC
Permit Expiration:	10/17/1995

ROY LADD (Continued) **S101102098**

Facility Owner:	Not reported
Facility Address:	Not reported
Facility City:	Not reported
Facility State:	Not reported
Facility Zip:	Not reported
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Facility Id:	204183
Business Type:	6HK18
EPA Id Number:	Not reported
APN:	DEH-134729
Last HMMD Inspection:	02/06/2012
Permit Status:	OPEN
Permit Expiration:	01/31/2013
Facility Owner:	CITY OF OCEANSIDE WATER UTILITIES
Facility Address:	300 N COAST HIGHWAY
Facility City:	OCEANSIDE
Facility State:	CA
Facility Zip:	92054
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

Active Permits:

Facility Id:	204183
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	Not reported
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	CHRONIC

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10 **East** **1/4-1/2** **0.420 mi.** **2219 ft.**	**MURRAY BRIDGE MIDDLE SCHOOL** **FRAZEE ROAD/GARDENIA STREET** **OCEANSIDE, CA 92057**	**ENVIROSTOR**	**S105628887** **N/A**

Relative: **Higher**

Actual: **74 ft.**

ENVIROSTOR:

Facility ID:	37010029
Status:	No Further Action
Status Date:	07/24/2002
Site Code:	404341
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	30

MURRAY BRIDGE MIDDLE SCHOOL (Continued) **S105628887**

NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Shahir Haddad
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	76
Senate:	36
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	33.24598
Longitude:	-117.3024
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic DDD DDE DDT
Confirmed COC:	30001-NO 30006-NO 30007-NO 30008-NO
Potential Description:	SOIL
Alias Name:	MURRAY BRIDGE MIDDLE SCHOOL
Alias Type:	Alternate Name
Alias Name:	OCEANSIDE UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	OCEANSIDE USD-MURRAY BRIDGE MIDDLE SCL
Alias Type:	Alternate Name
Alias Name:	404341
Alias Type:	Project Code (Site Code)
Alias Name:	37010029
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	03/24/2003
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	05/21/2002
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	07/24/2002
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	04/09/2003
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported

MURRAY BRIDGE MIDDLE SCHOOL (Continued) **S105628887**

Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

11	**PALA WEST SCHOOL**	**ENVIROSTOR**	**S105628884**
SW	**PALA ROAD/DOUGLAS DRIVE**		**N/A**
1/2-1	**OCEANSIDE, CA 92068**		
0.722 mi.			
3812 ft.			

Relative:
Lower

Actual:
62 ft.

ENVIROSTOR:

Facility ID:	37010026
Status:	No Further Action
Status Date:	07/09/2003
Site Code:	404314
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	15
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	DTSC
Program Manager:	Sandra Karinen
Supervisor:	Shahir Haddad
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	76
Senate:	36
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	33.23787
Longitude:	-117.3217
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Toxaphene Dieldrin
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	OCEANSIDE UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	OCEANSIDE USD-PALA RD. MONARCH POINT
Alias Type:	Alternate Name
Alias Name:	OCEANSIDE USD-PROPOSED PALA WEST ES
Alias Type:	Alternate Name
Alias Name:	PALA WEST SCHOOL
Alias Type:	Alternate Name
Alias Name:	110033605828
Alias Type:	EPA (FRS #)
Alias Name:	400802
Alias Type:	Project Code (Site Code)
Alias Name:	404314
Alias Type:	Project Code (Site Code)
Alias Name:	37010026
Alias Type:	Envirostor ID Number

Completed Info:

PALA WEST SCHOOL (Continued) **S105628884**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 10/26/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/06/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/14/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 03/14/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 11/22/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 08/29/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 09/17/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 10/15/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 07/16/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement

PALA WEST SCHOOL (Continued) **S105628884**

Completed Date:	07/09/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	08/14/2002
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 2 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
OCEANSIDE	S117705851	N RIVER RD 1 000 SLY COLLEGE	N RIVER RD 1 000 SLY COLLEGE	92057	NPDES
OCEANSIDE	S112138260	FRESH & EASY NEIGHBORHOOD MARKET #	4908 NORTH RIVER RD	92057	San Diego Co. HMMD

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Varies

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA’s knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/04/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/04/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/17/2015
Date Data Arrived at EDR: 08/18/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 16

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/18/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 24

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 27

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/06/2015
Date Data Arrived at EDR: 05/19/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/04/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/08/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/24/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 47

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/10/2015	Telephone: 202-307-1000
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 05/29/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 02/23/2009
Number of Days to Update: 21	Next Scheduled EDR Contact: 05/25/2009
	Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/03/2015	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 08/04/2015	Telephone: 916-323-3400
Date Made Active in Reports: 09/03/2015	Last EDR Contact: 08/04/2015
Number of Days to Update: 30	Next Scheduled EDR Contact: 11/16/2015
	Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2014	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 03/10/2015	Telephone: 916-255-6504
Date Made Active in Reports: 03/18/2015	Last EDR Contact: 08/07/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 10/28/2015
	Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995	Source: State Water Resources Control Board
Date Data Arrived at EDR: 08/30/1995	Telephone: 916-227-4364
Date Made Active in Reports: 09/26/1995	Last EDR Contact: 01/26/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/10/2015	Telephone: 202-307-1000
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 05/29/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990’s. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009	Source: Department of Public Health
Date Data Arrived at EDR: 09/23/2009	Telephone: 707-463-4466
Date Made Active in Reports: 10/01/2009	Last EDR Contact: 06/01/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/25/1991	Telephone: 916-341-5851
Date Made Active in Reports: 02/12/1991	Last EDR Contact: 07/26/2001
Number of Days to Update: 18	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/05/1995	Telephone: 916-341-5851
Date Made Active in Reports: 09/29/1995	Last EDR Contact: 12/28/1998
Number of Days to Update: 24	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/11/2015	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 06/16/2015	Telephone: 916-323-3400
Date Made Active in Reports: 07/14/2015	Last EDR Contact: 06/05/2015
Number of Days to Update: 28	Next Scheduled EDR Contact: 09/21/2015
	Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/08/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 35

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 07/28/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 6

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/28/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/08/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/17/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/07/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/07/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 07/22/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 40

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 07/22/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 40

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/22/2015
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/14/2015
Date Data Arrived at EDR: 06/03/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 91

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 18

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/18/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/12/2015
Number of Days to Update: 20

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 12

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/07/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/06/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/24/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/17/2015
Date Data Arrived at EDR: 08/18/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 16

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/14/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/19/2014
Number of Days to Update: 35

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/17/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/28/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/13/2015
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 35

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/20/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/07/2015
Date Data Arrived at EDR: 06/10/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 34

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/19/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/05/2015
Number of Days to Update: 12

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 08/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/22/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 12

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 06/05/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 31

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/15/2015
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 17

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/10/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/03/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 05/20/2015
Date Data Arrived at EDR: 08/03/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 31

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 7

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 08/03/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/13/2015
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 20

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/04/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 27

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/24/2015
Next Scheduled EDR Contact: 12/07/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 08/11/2015
Date Data Arrived at EDR: 08/14/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 08/07/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 06/18/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/07/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 18

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 08/11/2015
Date Data Arrived at EDR: 08/14/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 20

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/20/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 07/21/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 13

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/21/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2015
Date Data Arrived at EDR: 07/27/2015
Date Made Active in Reports: 08/10/2015
Number of Days to Update: 14

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/20/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/17/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/03/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 16

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/27/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/03/2015
Date Data Arrived at EDR: 06/04/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 32

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 17

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014
Date Data Arrived at EDR: 10/22/2014
Date Made Active in Reports: 12/15/2014
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 10

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 06/01/2015
Date Data Arrived at EDR: 06/03/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 33

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/30/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/16/2015
Number of Days to Update: 9

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 06/03/2015
Date Data Arrived at EDR: 06/04/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 48

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/10/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/06/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/11/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 23

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/11/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/01/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 08/05/2015
Number of Days to Update: 29

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/15/2015
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 07/15/2015
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 10

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 07/27/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 7

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/30/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/10/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/06/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/06/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 10

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/10/2015
Number of Days to Update: 15

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 07/22/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 12

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/15/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/10/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 28

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 06/10/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/10/2015
Date Data Arrived at EDR: 08/14/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 20

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/07/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 13

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/12/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 24

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2015
Date Data Arrived at EDR: 06/24/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 20

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2015
Date Data Arrived at EDR: 06/30/2015
Date Made Active in Reports: 07/07/2015
Number of Days to Update: 7

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 18

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 7

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/05/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 27

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 07/13/2015
Date Data Arrived at EDR: 07/28/2015
Date Made Active in Reports: 08/03/2015
Number of Days to Update: 6

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/24/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 08/17/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 17

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 07/29/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 36

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/27/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/27/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 07/08/2015
Date Data Arrived at EDR: 07/13/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 9

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/04/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 09/03/2015
Number of Days to Update: 27

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/06/2015
Date Made Active in Reports: 08/24/2015
Number of Days to Update: 18

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/06/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/20/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Telephone: 281-546-1505
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: 800-823-6277
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

13.5 Preliminary Title Report

First American Title

This report has been amended/updated to reflect the following matters:

[ ] No changes made to the report other than the Effective Date

[ ] Property address has been revised

[ ] Vesting has been revised

[ ] Legal Description has been revised

[X] Taxes have been updated

[ ] Original item number(s) have been removed

[ ] New item number(s) have been added

[X] Original item number(s) 1 have been revised

[X] Other: Informational Notes item no. 1 has been revised

Updated (02/12/13)

First American Title Company

4380 La Jolla Village Drive, Suite 200
San Diego, CA 92122

Harry House
Fresh Pac International
4665 North River Road
Oceanside, CA 92052
Phone: (760)331-7427
Fax:

Customer Reference:	So. Cal. Ag. Properties, Inc.
Order Number:	NHSC-2332309 (06)
Title Officer:	Dianne Livingston
Phone:	(858)410-1303
Fax No.:	(866)559-1843
E-Mail:	dslivingston@firstam.com
Owner:	So. Cal. Ag. Properties, Inc.
Property:	4665 North River Road Oceanside, CA

PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage of said Policy or Policies are set forth in Exhibit A attached. Copies of the Policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of February 08, 2013 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

TO BE DETERMINED

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

SO. CAL. AG. PROPERTIES, INC., A CALIFORNIA CORPORATION FORMERLY KNOWN AS FRESHPAC INTERNATIONAL, INC., A CALIFORNIA CORPORATION

The estate or interest in the land hereinafter described or referred to covered by this Report is:

A fee.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2013-2014, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement for open ditch, flume line and incidental purposes, recorded November 23, 1909 in Book 481 of Deeds, Page 41.
   In Favor of: Hayes Land Co.
   Affects: The land

   The location of the easement cannot be determined from record information.

4. An easement shown or dedicated on the Map as referred to in the legal description
   For: Right of way for public road purposes and incidental purposes.

5. An easement for right of way for pipelines, motor, pump and incidental purposes, recorded June 30, 1943 as Book 1518, Page 62 of Official Records.
   In Favor of: City of Oceanside, a Municipal Corporation of the Sixth Class
   Affects: The route or location of said easement cannot be determined from the record

6. An easement for either or both pole lines, underground conduits and incidental purposes, recorded July 29, 1944 as Book 2198, Page 226 of Official Records.
   In Favor of: San Diego Gas and Electric Company
   Affects: Said land

7. An easement for either or both pole lines, underground conduits and incidental purposes, recorded May 10, 1949 as Book 3199, Page 294 of Official Records.
   In Favor of: San Diego Gas and Electric Company
   Affects: Said land

8. An easement for either or both pole lines, underground conduits and incidental purposes, recorded November 20, 1952 as Book 4661, Page 1 of Official Records.
   In Favor of: San Diego Gas and Electric Company
   Affects: Said land

9. Intentionally Deleted

10. An easement for right to construct, reconstruct, repair, replace, operate, maintain and use sanitary sewer and appurtenances and incidental purposes, recorded June 11, 1964 as Instrument No. 105495 of Official Records.
    In Favor of: City of Oceanside
    Affects: Said land

11. An easement for either or both pole lines, underground conduits and incidental purposes, recorded February 14, 1969 as Instrument No. 27637 of Official Records.
    In Favor of: San Diego Gas and Electric Company
    Affects: Said land

12. An easement for either or both pole lines, underground conduits and incidental purposes, recorded February 21, 1969 as Instrument No. 31875 of Official Records.
    In Favor of: San Diego Gas and Electric Company
    Affects: Said land

13. An easement for either or both pole lines, underground conduits and incidental purposes, recorded April 6, 1970 as Instrument No. 59093 of Official Records.
    In Favor of: San Diego Gas and Electric Company
    Affects: Said land

14. An easement for sewer, effluent water main and incidental purposes, recorded February 19, 1974 as Instrument No. 040619 of Official Records.
    In Favor of: City of Oceanside
    Affects: Said land

15. An easement for sewer, effluent water main and incidental purposes, recorded February 19, 1974 as Instrument No. 040620 of Official Records.
    In Favor of: City of Oceanside
    Affects: Said land

16. Intentionally Deleted

17. An easement for public highway, utility and incidental purposes, recorded October 11, 1984 as Instrument No. 84-385626 of Official Records.

In Favor of:	City of Oceanside
Affects:	Said land

18. The terms and provisions contained in the document entitled "Public Improvements" executed by and between SCHU Properties, a General Partnership and City of Oceanside recorded November 14, 1985 as Instrument No. 85-428345 of Official Records.

19. The terms and provisions contained in the document entitled "Street Improvements" executed by and between Raymond Kawano, et al and City of Oceanside recorded January 13, 1986 as Instrument No. 86-014211 of Official Records.

20. The Parcel Map referred to in the Legal Description herein contains various restrictions in improving or developing the property herein described. reference is made to said Parcel Map for further particulars.

21. The terms and provisions contained in the document entitled "Agreement" executed by and between Lockridge Ward Wilson; Fern B. Wilson and SCHU Properties, a General Partnership recorded March 13, 1986 as Instrument No. 86-096949 of Official Records.

22. The terms and provisions contained in the document entitled "Declaration of Covenants" executed by and between (None shown) and (None shown) recorded April 9, 1986 as Instrument No. 86-136300 of Official Records.

23. An easement for slopes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381279 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

24. An easement for slopes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381281 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

25. An easement for emergency access and utility and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381283 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

26. An easement for temporary turn around and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381284 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

27. An easement for public right of way purposes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381286 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

28. An easement for public right of way purposes and incidental purposes, recorded June 29, 1992 as Instrument No. 92-0404303 of Official Records.

In Favor of:	City of Oceanside, a Municipal Corporation
Affects:	Said land

29. A deed of trust to secure an original indebtedness of $1,425,941.73 recorded August 2, 1995 as Instrument No. 1995-0333147 of Official Records.

Dated:	August 1, 1995
Trustor:	Freshpac International, Inc. a California Corporation
Trustee:	Allison McCloskey Escrow Company, a California Corporation
Beneficiary:	T.T. Miyasaka, Inc. a California Corporation

30. Rights of parties in possession.

Prior to the issuance of any policy of title insurance, the Company will require:

31. With respect to So. Cal. Ag. Properties, Inc., a corporation:
a. A certificate of good standing of recent date issued by the Secretary of State of the corporation's state of domicile.
b. A certified copy of a resolution of the Board of Directors authorizing the contemplated transaction and designating which corporate officers shall have the power to execute on behalf of the corporation.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

INFORMATIONAL NOTES

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

1. General and special taxes and assessments for the fiscal year 2012-2013.

First Installment:	$9,664.46, PAID
Penalty:	$0.00
Second Installment:	$9,664.46, PAID
Penalty:	$0.00
Tax Rate Area:	07064
A. P. No.:	157-060-40-00

LEGAL DESCRIPTION

Real property in the City of Oceanside, County of San Diego, State of California, described as follows:

PARCEL 1 OF PARCEL MAP NO. 14211, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, FEBRUARY 27, 1986.

APN: 157-060-40-00

NOTICE

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

If you have any questions about the effect of this new law, please contact your local First American Office for more details.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or

created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
   (a) created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.
4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
   (i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
   (ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
   (a) to timely record the instrument of transfer; or
   (b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

10. AMERICAN LAND TITLE ASSOCIATION RESIDENTIAL
TITLE INSURANCE POLICY - 1987
EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   * land use
   * land division
   * improvements on the land
   * environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in items 12 and 13 of Covered Title Risks.

2. The right to take the land by condemning it, unless:
   * a notice of exercising the right appears in the public records on the Policy Date
   * the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking.
3. Title Risks:
   * that are created, allowed, or agreed to by you
   * that are known to you, but not to us, on the Policy Date - unless they appeared in the public records
   * that result in no loss to you
   * that first affect your title after the Policy Date - this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   * to any land outside the area specifically described and referred to in Item 3 of Schedule A, or
   * in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:

a. building	b. zoning
c. land use	d. improvements on the land
e. land division	f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. SECOND GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (10/13/01)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the Land; (iii) a separation in ownership or a change in the dimensions or area of the Land or any parcel of which the Land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the Land has been recorded in the Public Records at Date of Policy. This exclusion

does not limit the coverage provided under Covered Risks 12, 13, 14 and 16 of this policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at Date of Policy. This exclusion does not limit the coverage provided under Covered Risks 12, 13, 14 and 16 of this policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the Public Records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without Knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
(a) created, suffered, assumed or agreed to by the Insured Claimant;
(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (this paragraph does not limit the coverage provided under Covered Risks 8, 16, 18, 19, 20, 21, 22, 23, 24, 25 and 26); or
(e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of the Insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable doing business laws of the state in which the Land is situated.
5. Invalidity or unenforceability of the lien of the Insured Mortgage, or claim thereof, which arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, except as provided in Covered Risk 27, or any consumer credit protection or truth in lending law.
6. Real property taxes or assessments of any governmental authority which become a lien on the Land subsequent to Date of Policy. This exclusion does not limit the coverage provided under Covered Risks 7, 8 (e) and 26.
7. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This exclusion does not limit the coverage provided in Covered Risk 8.
8. Lack of priority of the lien of the Insured Mortgage as to each and every advance made after Date of Policy, and all interest charged thereon, over liens, encumbrances and other matters affecting title, the existence of which are Known to the Insured at:
(a) The time of the advance; or
(b) The time a modification is made to the terms of the Insured Mortgage which changes the rate of interest charged, if the rate of interest is greater as a result of the modification than it would have been before the modification.
This exclusion does not limit the coverage provided in Covered Risk 8.
9. The failure of the residential structure, or any portion thereof to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at Date of Policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. The following existing statutes, reference to which are made part of the ALTA 8.1 Environmental Protection Lien Endorsement incorporated into this Policy following item 28 of Covered Risks: NONE.

13. SECOND GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (10/13/01) WITH REGIONAL EXCEPTIONS

When the American Land Title Association loan policy with EAGLE Protection Added is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 12 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

Part Two:

1. The following existing statutes, reference to which are made part of the ALTA 8.1 Environmental Protection Lien Endorsement incorporated into this Policy following item 28 of Covered Risks: None.

PRIVACY POLICY

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information – particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our parent company, The First American Corporation, we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information which you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its *Fair Information Values*, a copy of which can be found on our website at www.firstam.com.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies, and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies, or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's *Fair Information Values*. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

APPENDIX C
PHASE I ENVIRONMENTAL SITE ASSESSMENT – WESTERN PARCEL

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
4617 North River Road
Oceanside, California

Prepared for:
The Olson Company

June 8, 2005

SECOR Job No. 04OT.29220.91

SECOR

SECOR INTERNATIONAL INCORPORATED

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June 8, 2005

Ms. Kimberly Duran
The Olson Company
9171 Towne Centre Dr., Suite 450
San Diego, California 92122

RE: PHASE I ENVIRONMENTAL SITE ASSESSMENT
4617 North River Road
Oceanside, California

Dear Ms. Duran:

At the request and authorization of The Olson Company, SECOR International Incorporated (SECOR) has completed a Phase I Environmental Site Assessment (ESA) of the property located at 4617 North River Road, Oceanside, California (the Site). This Phase I ESA was conducted in accordance with the scope of work provided in The Olson Company's Master Consulting Services Agreement dated November 28, 2001 and ASTM Practice E1527-00. The following Executive Summary outlines SECOR's findings and recommendations. Please read the report for a comprehensive accounting of investigative results.

EXECUTIVE SUMMARY

The Site consists of one rectangular parcel of land comprising approximately 17 acres addressed as 4617 North River Road, Oceanside, California. The Site is located in a commercial and residential area of Oceanside, California (see Figure 1). The west side of the Site is bounded by a single-family residential neighborhood; the north side of the Site is bounded by North River Road followed by a single-family residential neighborhood. To the east of the Site is an access road followed by an automobile auction yard, and to the south is the San Luis Rey River.

The Site is currently developed with three residential structures, two commercial structures including a warehouse and a packing house, a dispatch office, and several small storage sheds. The majority of the Site, which is not occupied by these structures, is tilled for agricultural use. A dirt road bisects the Site from North River Road and leads to a perimeter dirt road which encircles the agricultural fields in the southern half of the Site. The Site is currently occupied by Nagata Brothers Farms who uses portions of the property for strawberry farming.

As a result of this Phase I ESA, the following recognized environmental conditions (REC) were identified on the Site:

- No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. George Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or exact location of these tanks. SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if any subsurface assessment is necessary to evaluate potential contamination to Site soils from these former USTs.

- Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

    - Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommends further investigation of the soils beneath this AST in order to assess the extent of petroleum hydrocarbon contamination.

    - Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommends the removal of this AST prior to Site development.

    - Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs and is supplied by two adjacent water wells. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR does recommend that the water AST be removed prior to Site development.

- According to Mr. Nagata, two operational water wells are located on the Site adjacent to the irrigation water AST discussed above. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portion of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. SECOR recommends that all observed onsite water wells be properly abandoned prior to Site development. SECOR would further recommend that a surveyor attempt to locate the remaining wells using the coordinates provided and that any wells discovered by this process or during Site grading activities be properly abandoned.

- Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent an environmental concern. SECOR recommends that during site grading that any suspect transite pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal and, therefore, not considered a significant potential cost on this project dependant on quantity. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal. Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommends that these features be avoided during Site development.

- Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommends sampling the soils in the vicinity of the pallets in order to assess the potential contamination (metals) which may have occurred due to these batteries.

- A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommends sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs), pesticides, and metals in order to verify that no contaminants are present above levels which would require remediation or removal from the Site.

- Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommends sampling the site soils for residual pesticides.

SECOR's Phase I ESA also identified the following non-ASTM issues which should be considered prior to development of the site:

- SECOR did not conduct a lead-based paint (LBP) evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, LBP should be anticipated. Prior to any disturbance of painted materials, SECOR recommends a LBP Survey be conducted in all structures intended for demolition.

- SECOR did not conduct an asbestos containing material (ACM) evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, ACMs should be anticipated in the building. Prior to any disturbances, SECOR recommends a comprehensive, AHERA-level sampling survey be conducted.

Other than as described above, no RECs were identified as a result of this Phase I ESA.

It has been a pleasure to provide these services for you, and we look forward to working with you in the future. Should there be any questions concerning the information contained in the following report, please contact the undersigned at (909) 335-6116.

Respectfully submitted,
SECOR International Incorporated

Justin R. Hone
Project Geologist

Kyle D. Emerson, CEG-1271
Senior Vice President

cc: Preston W. Brooks
Cox, Castle Nicholson LLP
2049 Century Park East, 28th Floor
Los Angeles, California 90067

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1.0 INTRODUCTION

1.1 OBJECTIVE

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify recognized environmental conditions (RECs) in connection with the Property. The term 'recognized environmental conditions', or RECs as defined in ASTM Standard Practice E1527-00, means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property, even if those substances are present under conditions in compliance with environmental laws.

1.2 SCOPE OF WORK

This assessment has been performed in a manner which complies with requirements of The Olson Company's Master Service Environmental Consulting Agreement protocols for Phase I ESAs dated November 28, 2001, and ASTM Standard Practice E1527-00. The scope of services did not include an assessment of overall environmental regulatory compliance, any subsurface investigation (including soil or groundwater sampling, exploratory boreholes or other investigative techniques to quantify potentially identified hazardous materials), and asbestos, lead-based paint, mold, or radon gas surveys.

2.0 SITE DESCRIPTION

2.1 LOCATION AND STATISTICS

The Site consists of one rectangular parcel of land comprising approximately 17 acres addressed as 4617 North River Road, Oceanside, California.

Property statistics:
Assessor Parcel Number: **157-060-1700**
Current site owner: Nagata Brothers, CA GP

2.2 SITE AND VICINITY CHARACTERISTICS

The Site is located in a commercial and residential area of Oceanside, California (see Figure 1). The west side of the Site is bounded by a single-family residential neighborhood; the north side of the Site is bounded by North River Road followed by a single-family residential neighborhood. To the east of the Site is an access road followed by an automobile auction yard, and to the south is the San Luis Rey River.

2.3 DESCRIPTIONS OF STRUCTURES, ROADS AND OTHER RELEVANT IMPROVEMENTS ON THE SITE

The Site is currently developed with three residential structures, two commercial structures including a warehouse and a packing house, a dispatch office, and several small storage sheds. The majority of the Site, which is not occupied by these structures, is tilled for agricultural use. A dirt road bisects the Site from North River Road and leads to a perimeter dirt road which encircles the agricultural fields in the southern half of the Site.

2.4 ENVIRONMENTAL LIENS

SECOR, during the course of this due diligence investigation, did not uncover any environmental liens on the Site.

2.5 CURRENT PROPERTY USE

The Site is currently occupied by Nagata Brothers Farms who uses portions of the property for strawberry farming. According to the owner, Mr. George Nagata, Site operations were minimal due to the anticipated sale of the land.

3.0 PROPERTY RECONNAISSANCE

SECOR performed a reconnaissance of the Site on May 24, 2005. Mr. George Nagata, representing the property owner, accompanied SECOR personnel during the Site reconnaissance. Weather conditions during the reconnaissance were clear and no weather related restrictions were encountered.

The purpose of the reconnaissance was to identify existing conditions and land uses that may suggest potential environmental impacts to the Site. Such conditions, to the extent visible and accessible, include storage, disposal and treatment of solid and/or hazardous waste, storage tanks and other chemical containers, odors, pools of liquid, staining, drains, sumps, pits, ponds, lagoons, septic systems, wells, unusual soil disturbance, stressed vegetation, and electrical transformers.

Field notes of the property reconnaissance are detailed further in the remainder of this report. Photographs taken of the Site are included in Appendix A.

3.1 INTERIOR PROPERTY OBSERVATIONS

Several structures are located in the northern portion of the Site. These included three residential structures, two commercial structures including a warehouse and a packing house, a dispatch office, and several small storage sheds. A permit for the addition of the awning covered portion (5,100 ft^2) of the warehouse was filed with the City of Oceanside Building Department in 1981. Other than a 1980 permit for constructing a detached dispatch office adjacent to the warehouse and adding office space onto the existing packing house, no other permits or applications were on file with the City for any of the other structures located on the Site. According to aerial photographs, it appears that all of the Site structures other than the afore-mentioned office additions were constructed prior to 1978 and therefore, lead-based paints (LBP) and asbestos containing materials (ACM) may have been utilized in their construction. LBP and ACM are further discussed in sections 3.5 and 3.6 below.

The warehouse (totaling 15,725 ft^2) includes a refrigerated storage room, room temperature storage room and an awning storage area with truck access. Two loading docks are located on the western side of the warehouse. The structure is constructed of metal siding on a concrete foundation. According to aerial photographs, it appears that this structure was built sometime between 1963 and 1974.

The packing house structure is located south of the warehouse. This structure had historically been used for sorting and packing fruit and/or berries produced on the farm land. It appeared to be in a state of disrepair and as if it had been a long time since it had last been operated. The structure was constructed of wood and the floor was raised approximately three feet above grade. According to aerial photographs, it appears that this structure was built sometime between 1953 and 1963.

Three residences are located on the Site. All three of these are on raised foundation and constructed of wood framing. Only one of the residences was currently occupied by residents. According to aerial photographs, two of the residences (including the one which is currently occupied) were constructed sometime between 1953 and 1963. The third and oldest residence was constructed sometime between 1946 and 1953.

3.2 EXTERIOR PROPERTY OBSERVATIONS

The portion of the Site not covered with buildings consists primarily of agricultural fields. A dirt road bisects the Site from North River Road and leads to a perimeter dirt road which encircles the agricultural fields in the southern half of the Site. Minor surface staining was noted on the dirt driveways throughout the Site; however, the impact did not appear to be significant and no further investigation is recommended regarding either of these features.

3.2.1 Surface Drainage

The Site slopes southward at a very shallow angle towards the San Luis Rey River which lies just south of the Site (see Figure 1). Storm water runoff from the street adjacent and east of the Site was channeled onto the Site. No evidence of improper discharge from the Site was observed during SECOR's site reconnaissance.

3.2.2 Surface Water

No surface water was visually identified at the property. In addition, no water saturated soil or leaking irrigation systems were observed during the Site walk.

3.2.3 Exterior Hazardous Materials Storage Areas

Hazardous materials were stored south of the warehouse structure. These included several 55-gallon drums of motor oil positioned horizontally on a dispenser rack. Surface staining in this area was minimal an no further investigation is recommended.

3.2.4 Exterior Subsurface Structures

According to Mr. George Nagata (Owner), two operational water wells are located on the Site adjacent to the irrigation water AST. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portions of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Groundwater was measured four of these wells in 1966 at between 58 and 63 feet below ground surface (bgs). SECOR recommends that all observed onsite water wells be properly abandoned prior to Site development and that any wells discovered during SIte grading activities be properly abandoned at that time.

Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not entirely replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent a non-ASTM environmental concern. SECOR recommends that during site grading that any suspect transit pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal dependant on quantities encountered and, therefore, not considered a significant potential cost on this project. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal.

Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommends that these features be avoided during Site development.

3.3 STORAGE TANKS

No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or location of these tanks.

SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if any subsurface assessment is necessary to evaluate potential contamination to Site soils.

Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

- Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommends further investigation of the soils beneath this AST in order to assess the extent of diesel contamination.

- Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommends the removal of this AST prior to Site development.

- Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs. Two adjacent water wells supply water to this AST. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR does recommend that the water wells and ASTs be properly abandoned prior to Site development.

3.4 POLYCHLORINATED BIPHENYLS (PCBS)

Electrical transformers, hydraulic equipment capacitors, fluorescent light fixtures, and similar equipment may contain polychlorinated biphenyls (PCBs) in the hydraulic fluids or dielectric insulating fluids within the units. The federal Toxic Substances Control Act (TSCA) generally prohibited the domestic manufacture of PCBs after 1979. There is, however, potential that the dielectric fluid in electrical and hydraulic equipment manufactured and constructed prior to that date contains PCBs.

Several high voltage transformers were located on the Site. Six pole-mounted transformers were observed along the west boundary. A pad-mounted transformer was observed north of the warehouse structure. All of these transformers appeared to be in good condition with no observable leakage at the time of Site reconnaissance. No further investigation is recommended.

3.5 LEAD-BASED PAINT (LBP)

Lead is a pliable, soft metal that is used in the construction of pipes, rods, and containers. Before 1978, lead was a common ingredient in paint because it added strength, shine and extended the life of the paint. In 1978 the EPA banned the use of lead pigments in paints used on interior and exterior residential surfaces. Lead poisoning can result from children having access to, and ingestion (by chewing) of lead-based paint covered surfaces. Inhalation of dust produced by normal oxidation, or scraping/sand-blasting of the paint, which may contain significant amounts of lead, is also a health hazard. The EPA/HUD action level for lead-based paint (LBP) is 0.5% dry weight.

SECOR did not conduct a LBP evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, LBP should be anticipated. Prior to any disturbance of painted materials, SECOR recommends a Pre-Demolition LBP Survey be conducted on all of the Site structures.

3.6 ASBESTOS CONTAINING MATERIALS (ACMS)

Asbestos is a common term for a group of naturally occurring mineral fibers. Due to its durability and insulating quality, it was used in a wide variety of building products including structural fireproofing, pipe and duct insulation, plasters, roofing, floor tile, and linoleum. Adverse health effects have been associated with the inhalation of airborne asbestos fibers. The asbestos fibers that are tightly bound in building materials, however, do not represent an exposure hazard unless disturbed in such a way that releases airborne fibers (i.e., cutting, drilling, or sanding). By June of 1978, the US Environmental Protection Agency (US EPA) had effectively banned the use of asbestos in building materials.

SECOR did not conduct an asbestos containing material (ACM) evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, ACMs should be anticipated in the buildings. Prior to any disturbances, recommends a comprehensive, AHERA-level Pre-Demolition ACM Survey be conducted on all of the Site structures.

3.7 SOLID WASTE DISPOSAL ISSUES

Other than the small non-hazardous debris piles, no evidence of illegal dumping of solid waste was observed during SECOR's Site reconnaissance. Solid waste generated on site appears to be disposed of through municipal services. No further assessment is recommended.

A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommends sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs), pesticides, and metals in order to verify that no contaminants are present above levels which would require remediation or removal from the Site.

Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommends sampling the soils in the vicinity of the pallets in order to assess the potential contamination which may have occurred due to these batteries. In addition, SECOR recommends that these batteries be disposed of from the Site prior to Site acquisition.

3.8 PESTICIDE ISSUES

Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommends sampling the site soils for residual pesticides.

3.9 RADON GAS

Radon-222 (radon) is a naturally occurring gas that is prevalent in certain areas of the country. The U.S. EPA has determined that exposure to 4.0 pCi/L of radon gas on a regular basis increases the risk of lung cancer. In 1990, the California Department of Health Services conducted a two-phase statewide radon survey. The first phase of the survey involved a radon selection of owner-occupied single-family dwellings, monitored utilizing a short-term (two-day) radon detector. Following sample collection, the detectors were sent to the EPA for analysis. In the second phase, 10 percent of the previous group was monitored with long-term (one year) radon detectors that were returned to the EPA for analysis.

The Site is located in an area designated as a Radon Zone Level 3 with a predicted average indoor screening level less than 2 pCi/L. The information regarding this determination is contained in the EDR report attached as Appendix B page A-73. Based on this data, Radon is not considered an issue that would require further assessment at this Site.

3.10 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located in the City of Oceanside, California. A review of the USGS 7.5 minute topographic map of the San Luis Rey Quadrangle shows the site located at an elevation of approximately 70 feet above mean sea level (MSL; Figure 1), with a southwesterly gradient.

The subject property lies within the Peninsular Range Geomorphic Province (CDMG, 1969). The Peninsular Range Geomorphic Province is characterized by northwest trending ranges and valleys resulting from sub-parallel transform faults accommodating the Pacific-North American plate contact motions.

The site is underlain by Pleistocene marine and non-marine terrace deposits. The surface deposits in the vicinity of the Site are further described as well-indurated sandstone and conglomerate terrace deposits (CDMG, 1965). No active faults were identified within one mile of the Site (USGS, 2004). The nearest active fault identified is the Newport-Inglewood-Rose Canyon Fault located approximately five miles west of the site.

The Site is located within the San Diego Region (9) of the California Regional Water Quality Control Board (CRWQCB). Groundwater is expected to flow southwest towards the Pacific Ocean. The Site is mapped as being in a 500-year flood zone related to the nearby San Luis Rey River.

According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. Groundwater was measured four of these wells in 1966 at between 58 and 63 feet below ground surface (bgs). SECOR recommends that these wells be located and properly abandoned prior to Site development. Regional groundwater flow is anticipated to be to the west-southwest, towards the Pacific Ocean.

3.11 ADJACENT SITE RECONNAISSANCE

The site is located within a residential and commercial area in the City of Oceanside. According to the earliest available aerial photographs, the area was partially developed prior to the late 1940's for agricultural purposes. No RECs were identified as a result of adjacent site reconnaissance.

4.0 PUBLIC RECORD REVIEW SECTION

4.1 ENVIRONMENTAL DATA RESOURCES REPORT

SECOR contracted with Environmental Data Resources, Inc. (EDR) to review databases maintained by various federal and state environmental agencies. The purpose of the review was to identify reported listings for the subject property or other properties in the vicinity. The reviewed databases included federal and state lists of known or suspected contaminated Sites, known handlers or generators of hazardous waste, known waste disposal facilities and permitted underground storage tanks. The databases which were researched and the searched distances for each database, if applicable, include the following described below:

- US Environmental Protection Agency (EPA): National Priorities List (NPL), Federal Superfund List, one mile. Date of government version 04/28/05;
- US EPA Resource Conservation and Recovery Act (RCRA) Corrective Action Order (CORRACTS): RCRA facilities with a "corrective action order" where a release of hazardous waste to the environment has occurred, one mile. Date of government version 03/29/05;
- STATE equivalent Comprehensive Environmental Response, Cleanup and Liability Information System (CERCLIS) list (SCL) provided by the California Environmental Protection Agency, Department of Toxic Substances Control, one-half mile. Date of government version 02/15/05;
- US EPA CERCLIS/NFRAP list, one-half mile. Date of government version 03/22/05;
- STATE Leaking Underground Storage Tank list (LUST), one-half mile. Records contain an inventory of reported leaking underground storage tank incidents/State Water Resources Control Board. Date of government version 01/10/05;
- STATE Solid Waste Land Fill Information System (SWLF) database consists of open as well as closed and inactive solid waste disposal facilities and transfer stations, one-half mile. Date of government version 03/14/05;
- STATE Registered Underground Storage Tank (UST) list, one-quarter mile. Source is the State Water Resources Control Board. Date of government version 04/12/05;
- STATE Registered Aboveground Storage Tank (AST) list, one-quarter mile. Registered AST with the State Water Resources Control Board. Date of government version 02/01/05;
- Resource Conservation and Recovery Act Information (RCRA). Includes selective information on sites which generate, transport, store or treat hazardous waste as defined by the RCRA act. Date of government version 03/13/05;
- CHMIRS – California Hazardous Material Incident Report System. Source is the Office of Emergency Services. This list has not been updated since 12/31/03;
- CAL-SITES – Cal-Sites List. Source is he Department of Toxic Substance Control. Date of government version: 02/07/05;
- HIST UST- Hazardous Substance Storage Container Database. Source is the State Water Resources Control Board. Date of government version: 10/15/90;
- CORTESE – Hazardous Waste and Substances Sites List. Source is the Cal EPA office of Emergency Information. The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF) and the Department of Toxic Substances Control (cal-Sites). Date of government version 04/01/01 and no update is planned;
- Proposition Notification 65 Records (NOTIFY 65). Source is the State Water Resource Board, one mile. Date of government version 10/21/93;
- CLEANERS – A list of dry cleaner related facilities that have EPA ID numbers. Source is the Department of Toxic Substances Control. Date of government version 04/18/05;

- HAZNET – Hazardous Waste Information System. The data is extracted from copies of hazardous waste manifests from the Department of Toxic Substances Control. Date of government version 12/31/02;

The complete database listings prepared by EDR and a map showing the locations of listed sites relative to the subject property are presented in Appendix B. The results of SECOR's review of listed sites is summarized and discussed below.

HIST UST

One HIST UST listings was reported in the EDR report within a one-half mile radius. The Site is listed under this database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000 gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or location of these tanks.

SECOR personnel requested information for the Site address from the California Regional Water Quality Control Board (CRWQCB), the County of San Diego Department of Environmental Health, and the City of Oceanside Fire Department. The County of San Diego Department of Environmental Health indicated that records were on file for the Site. SECOR recommends that these files be reviewed prior to determining if a subsurface assessment is necessary at the Site.

4.2 CITY, COUNTY AND STATE RECORDS REVIEW

4.2.1 City of Oceanside Fire Department

SECOR contacted the City of Oceanside Fire Department on May 24, 2005 to determine if the subject property was listed in any databases maintained by their offices. According to fire department staff, no records exist for the Site address. Fire Department personnel referred SECOR to the County of San Diego Department of Environmental Health.

4.2.2 City of Oceanside Building Department

SECOR staff visited the City of Oceanside Building Department to research historical building permits on file for the Site addresses 4617 North River Road. Several permits from the late 1970's and early 1980's are on file with the Building Department for additions to existing structures and electrical permits. No records for original construction were on file for any of the Site structures.

4.2.3 County of San Diego Department of Environmental Health (DEH)

The DEH was contacted to determine if the Site was listed in any database maintained by their office. According to DEH personnel, files exist for the Site address. SECOR recommends that these files be reviewed prior to determining if a subsurface assessment is necessary at the Site.

5.0 HISTORICAL RECORDS REVIEW

SECOR developed an understanding of past use of the property through research of the following available information resources.

5.1 AERIAL PHOTOGRAPHIC REVIEW

Aerial photographs for the property and surrounding areas were obtained from the County of San Diego Cartographic Services Department, to evaluate historical usage of the site and adjacent properties. The photographs were also reviewed to evaluate any discernible evidence of potential sources of negative environmental impact at the site. The general activity on a property and land use changes can often be discerned from the type and layout of structures visible in aerial photographs and maps; however, specific elements of a site operation cannot normally be determined.

The following aerial photographs of the Site and surrounding areas were examined during SECOR's historical investigations.

1. **Photographer: Jack Amman**
   Date: 1946
   Scale: 1"=555'

   The Site appears to be developed with a small structure (residential). The remainder of the Site appears to be a portion of a larger agricultural land. The surrounding area is predominantly agricultural with small pockets of undeveloped land, mostly along the San Luis Rey River.

2. **Photographer: Park**
   Date: 1953
   Scale: 1"=555'

   The Site appears to be developed with one of the existing residential structures and a small shed. The surrounding areas appear similar the 1946 photograph.

3. **Photographer: Cartwright**
   Date: 1963
   Scale: 1"=555'

   The Site is now developed with all the existing residences and packing house. The surrounding areas appear similar the 1953 photograph.

4. **Photographer: AMI**
   Date: 1974
   Scale: 1"=600'

   The warehouse structure located on the Site appears in this photograph and the Site appears to be in its current configuration. Residential neighborhoods appear to the north of the Site.

5. **Photographer: USGS**
   Date: 1990
   Scale: 1"=666'

   The Site appears similar to the 1974 photograph. The property located adjacent and west of the Site appears to be graded for the existing residential development. The surrounding areas appear to be predominantly residential.

6. **Photographer: USGS**
   Date: 1994
   Scale: 1"=666'

   The Site and its surrounding appear similar to the 1990 photograph. The auto auction yard appears east of the Site.

7. **Photographer: USGS**
   Date: 2002
   Scale: 1"=666'

   The Site and its surrounding appear similar to the 1994 photograph.

SECOR's interpretation of historical aerial photographs shows the Site as agricultural with residential houses and the surrounding area as a residential/commercial zone with residential housing and a few commercial buildings. No potential Site impact from adjoining properties was identified in SECOR's review of historical aerial photographs.

5.2 FIRE INSURANCE MAPS

No Sanborn fire insurance map coverage was available for the Site.

5.3 HISTORICAL CITY STREET DIRECTORIES

Available historical City Directories were requested from EDR. Available directories were researched for the years spanning 1921 through 2000. The Site address was not listed until 1980 as "Agri Distributing" and as "Nagata Bros. Farm" in 1985. No previously unidentified recognized environmental conditions were discovered from SECOR's historical City Directory review.

5.4 HISTORICAL TOPOGRAPHIC MAP REVIEW

Available historical topographic maps were requested from EDR and available maps were reviewed for the years 1997, 1975 (Photorevised 1968), 1968, and 1949. The maps depict the Site as agricultural land in 1949 and later. The 1968 map shows several structures on the Site. The 1975 map depicts the existing structures and streets in the area. No recognized environmental conditions were identified from SECOR's historical topographic map review.

5.5 FORMER ENVIRONMENTAL REPORTS

SECOR was not provided with any former environmental reports concerning the property.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Site consists of one rectangular parcel of land comprising approximately 17 acres of land addressed as 4617 North River Road, Oceanside, California. The Site is located in a commercial and residential area of Oceanside, California (see Figure 1). The west side of the Site is bounded by a single-family residential neighborhood; the north side of the Site is bounded by North River Road followed by a single-family residential neighborhood. To the east of the Site is an access road followed by an automobile auction yard, and to the south is the San Luis Rey River.

The Site is currently developed with three residential structures, two commercial structures including a warehouse and a packing house, a dispatch office, and several small storage sheds. The majority of the Site, which is not occupied by these structures, is tilled for agricultural use. A dirt road bisects the Site from North River Road and leads to a perimeter dirt road which encircles the agricultural fields in the southern half of the Site. The Site is currently occupied by Nagata Brothers Farms who uses portions of the property for strawberry farming.

As a result of this Phase I ESA, the following recognized environmental conditions (REC) were identified on the Site:

- No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. George Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or exact location of these tanks. SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if any subsurface assessment is necessary to evaluate potential contamination to Site soils from these former USTs.

- Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

    - Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommends further investigation of the soils beneath this AST in order to assess the extent of petroleum hydrocarbon contamination.

    - Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommends the removal of this AST prior to Site development.

- Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs and is supplied by two adjacent water wells. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR does recommend that the water AST be removed prior to Site development.

- According to Mr. Nagata, two operational water wells are located on the Site adjacent to the irrigation water AST discussed above. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portion of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. SECOR recommends that all observed onsite water wells be properly abandoned prior to Site development. SECOR would further recommend that a surveyor attempt to locate the remaining wells using the coordinates provided and that any wells discovered by this process or during Site grading activities be properly abandoned.

- Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent an environmental concern. SECOR recommends that during site grading that any suspect transite pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal and, therefore, not considered a significant potential cost on this project dependant on quantity. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal. Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommends that these features be avoided during Site development.

- Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommends sampling the soils in the vicinity of the pallets in order to assess the potential contamination (metals) which may have occurred due to these batteries.

- A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommends sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs), pesticides, and metals in order to verify that no contaminants are present above levels which would require remediation or removal from the Site.

- Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommends sampling the site soils for residual pesticides.

SECOR's Phase I ESA also identified the following non-ASTM issues which should be considered prior to development of the site:

- SECOR did not conduct a lead-based paint (LBP) evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, LBP should be anticipated. Prior to any disturbance of painted materials, SECOR recommends a LBP Survey be conducted in all structures intended for demolition.

- SECOR did not conduct an asbestos containing material (ACM) evaluation during the Site reconnaissance. However, given the pre-1978 construction of the Site structures, ACMs should be anticipated in the building. Prior to any disturbances, SECOR recommends a comprehensive, AHERA-level sampling survey be conducted.

Other than as described above, no RECs were identified as a result of this Phase I ESA.

7.0 CLOSURE

The conclusions presented in this report are professional opinions based on data described in this report. The report was prepared in accordance with SECOR's Master Service Agreement with this Client, and the to extent any provisions of the report conflicts with the Master Service Agreement, the Master Service Agreement shall control. Without limitation of the foregoing, the opinions of this report have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location, and are subject to the following inherent limitations

1) SECOR derived the data in this report primarily from visual inspections, examination of records in the public domain, and interviews with individuals having information about the Site. The passage of time, manifestation of latent conditions, or occurrence of future events may require further study at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions in the report.

2) The data reported and the findings, observations, and conclusions expressed in the report are limited by the scope of work. The scope of the Phase I ESA performed by SECOR was performed in accordance with the scope of work presented in the Master Service Agreement and ASTM Practice E1527-00.

3) The professional opinions presented in this report are intended only for the purpose, Site location, and project indicated. This report is not a definitive study of contamination at the Site and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions was not performed as part of this investigation. No sampling or chemical analyses of structural materials or other media was completed as part of this study unless explicitly stated.

4) This report is based, in part, on unverified information supplied to SECOR by third-party sources. While efforts have been made to substantiate this third-party information, SECOR cannot guarantee its completeness or accuracy.

8.0 REFERENCES

California Division of Mines and Geology (CDMG), 1962, Geologic Map of California, San Diego and El Centro Sheet, County of San Diego, California, Scale 1:250,000.

CDMG, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.

City of Oceanside Building and Safety Department (760) 435-3065.

City of Oceanside Fire Department (760) 435-4100.

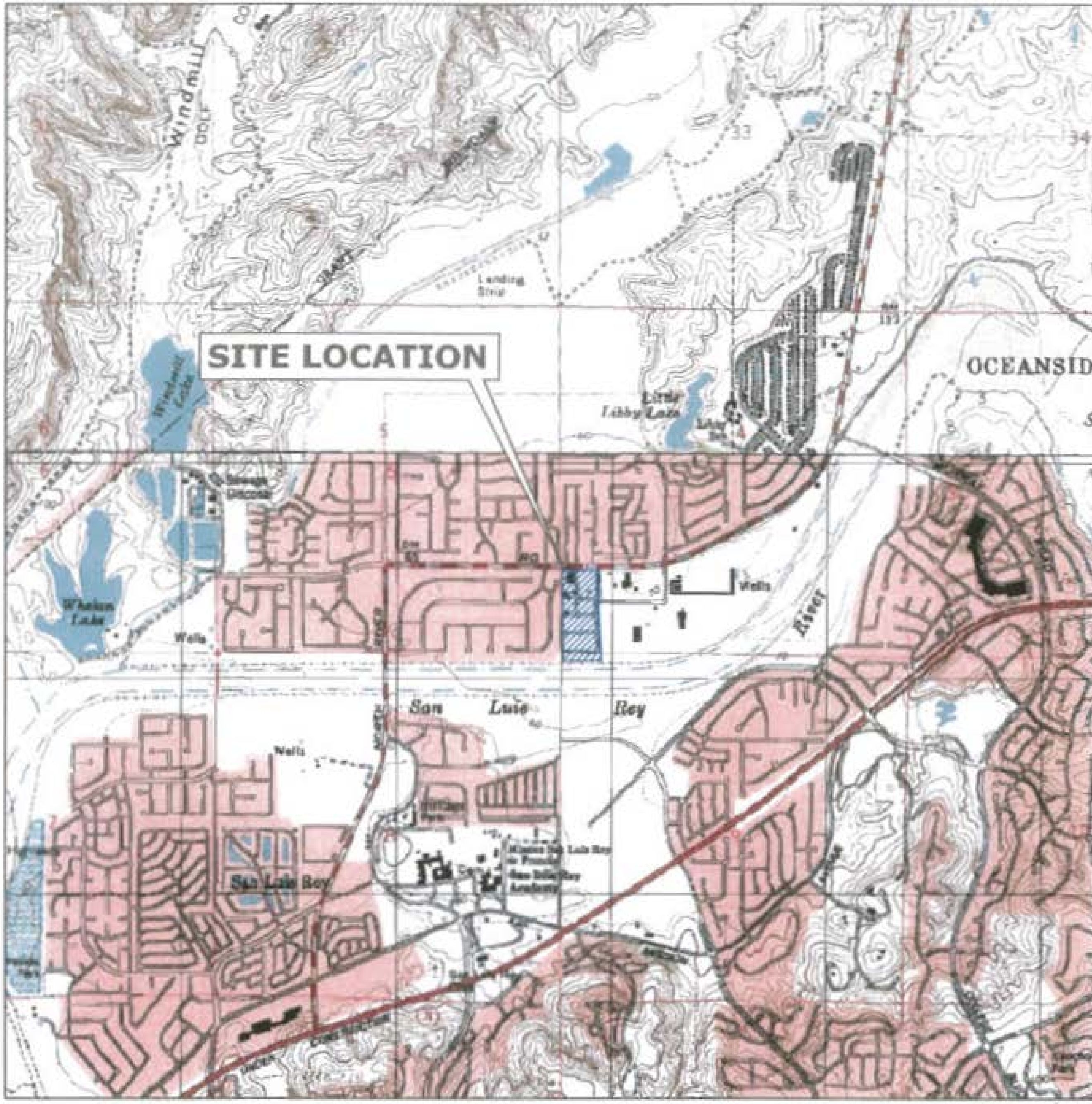
County of San Diego Department of Environmental Health (619) 338-2222.

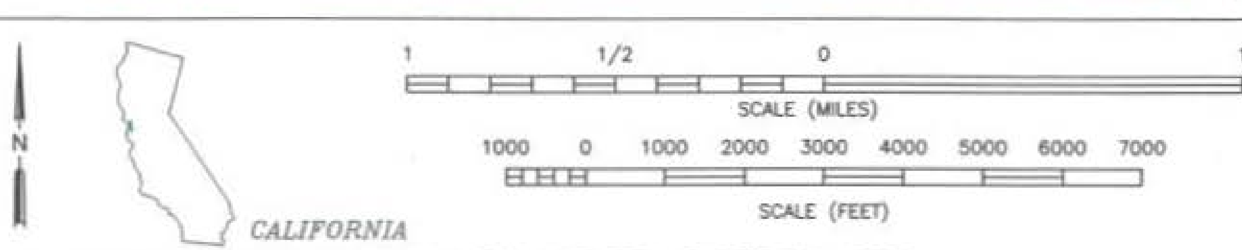
Department of Oil and Gas (DOG) website, 2004, Regional Wildcat Map W1-7. http://www.consrv.ca.gov/dog/maps/index_map.htm.

Environmental Data Resources, Inquiry number: 1425996.2s.

Southern California Earthquake Data Center (SCEDC) Website, 2004, http://www.data.scec.org

FIGURES

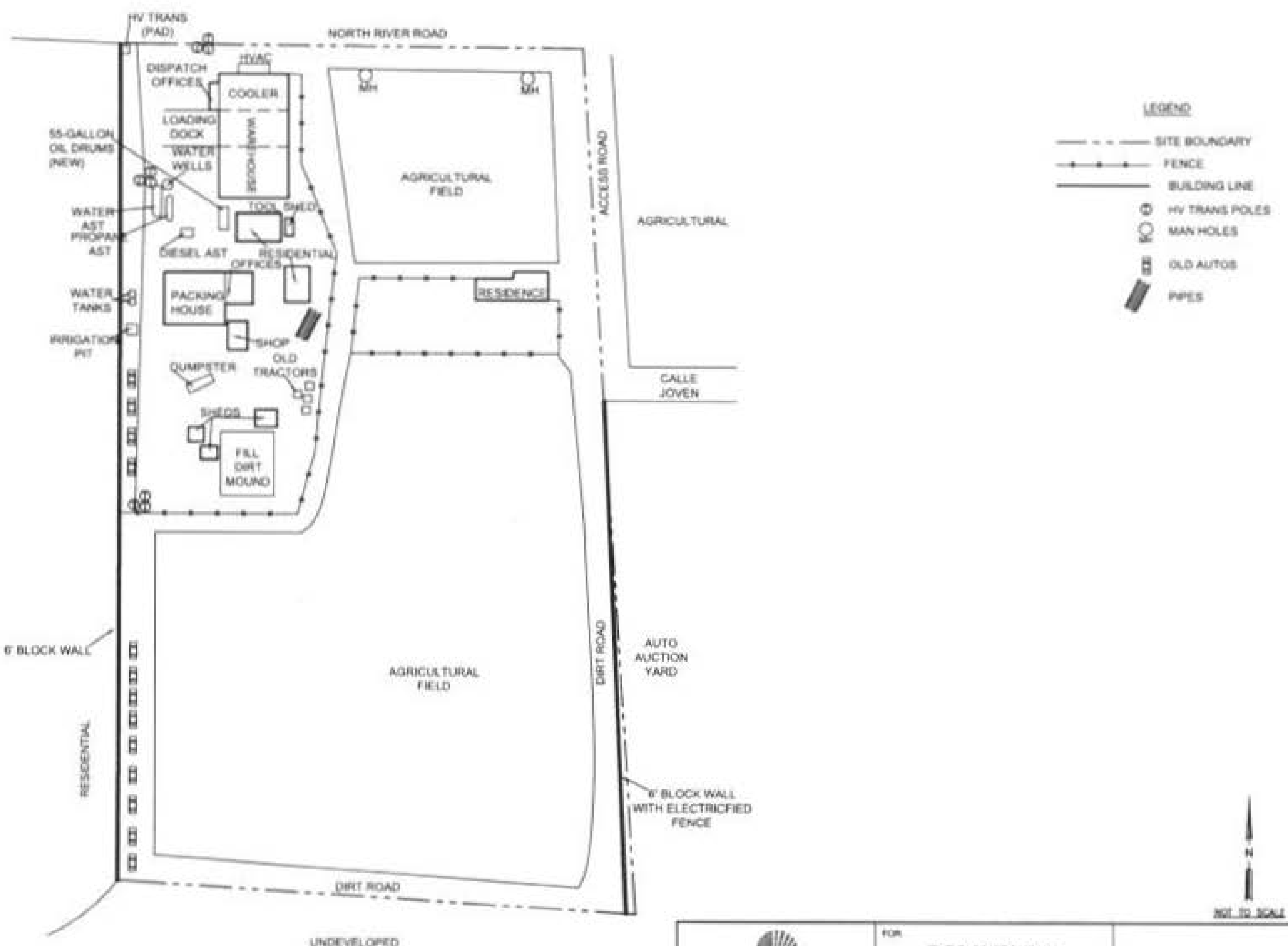




REFERENCE: USGS 7.5 MINUTE QUADRANGLE; SAN LUIS REY, CALIFORNIA; 1995

	FOR:				FIGURE:
SECOR	THE OLSON COMPANY 4617 NORTH RIVER ROAD OCEANSIDE, CALIFORNIA		SITE LOCATION MAP		1
25864 BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA PHONE: (909) 335-6116/335-6120 (FAX)	JOB NUMBER: 04OT.29220.91	DRAWN BY: CTORRES	CHECKED BY:	APPROVED BY:	DATE: 06/06/05

FILEPATH:Q:\CADD-01\Cad_Files\Projects\Office\004\olson co\29220\91\04OT2992091-1SLM.dwg modified by ctorres on Jun 08, 2005 at 9:39



	FOR: THE OLSON COMPANY 4617 NORTH RIVER ROAD OCEANSIDE, CALIFORNIA		SITE PLAN	FIGURE: 2
BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA PHONE: ... (FAX)	JOB NUMBER: 04OT 29020.61	DRAWN BY: CTORRES	CHECKED BY:	APPROVED BY:	DATE:

FILEPATH: G:\CADD-01\Cad_Files\Projects\Offices\... dwg modified by ctorres on Jun 08, 2005 at 10:04

APPENDIX A
SITE PHOTOGRAPHS

4617 North River Road
Oceanside, CA – PHOTOLOG

Photograph No. 1
View from the northwest corner of the Site, looking south. Note the Site warehouse to the left and the overhead high-voltage lines.

Photograph No. 2
View from the northeast corner of the Site, looking south. Note the residence in background and agricultural field in foreground.

Photograph No. 3
View from the southeast corner of the Site, looking north.

Photograph No. 4
View from the southwest corner of the Site, looking north along the Site boundary. Note the old cars to the left.

Photograph No. 5
View from atop the fill dirt mound located on the Site, looking southeast.

Photograph No. 6
View of the diesel AST and packing house structure.

Photograph No. 7

View of the propane and water ASTs. Note the three pole mounted transformers and overhead high-voltage lines.

Photograph No. 8

View of two irrigation water tanks and possible water well located west of the packing house.

Photograph No. 9
View of used batteries stored on pallets in front of the packing house.

Photograph No. 10
Close-up view of the diesel AST and related surface staining.

Photograph No. 11
View of the 55-gallon motor oil drums located on the Site.

Photograph No. 12
View of the interior of the shop structure.

APPENDIX B
ENVIRONMENTAL DATA RESOURCES DATABASE REPORT

EDR™ Environmental Data Resources Inc

The EDR Radius Map
with GeoCheck®

Olson - Oceanside
4617 North River Road
Oceanside, CA 92057

Inquiry Number: 1425996.2s

May 20, 2005

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

4617 NORTH RIVER ROAD
OCEANSIDE, CA 92057

COORDINATES

Latitude (North):	33.245300 - 33˚ 14' 43.1"
Longitude (West):	117.313100 - 117˚ 18' 47.2"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	470832.0
UTM Y (Meters):	3678333.2
Elevation:	71 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	33117-B3 SAN LUIS REY, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 6 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
NAGATA BROS. FARMS 4617 N RIVER RD OCEANSIDE, CA 92068	HIST UST	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL........................ National Priority List
Proposed NPL.............. Proposed National Priority List Sites
CERCLIS.................... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP................ CERCLIS No Further Remedial Action Planned

EXECUTIVE SUMMARY

CORRACTS................ Corrective Action Report
RCRA-TSDF................ Resource Conservation and Recovery Act Information
RCRA-LQG................ Resource Conservation and Recovery Act Information
RCRA-SQG................ Resource Conservation and Recovery Act Information
ERNS................ Emergency Response Notification System

STATE ASTM STANDARD

AWP........................ Annual Workplan Sites
Cal-Sites........................ Calsites Database
CHMIRS........................ California Hazardous Material Incident Report System
Cortese........................ "Cortese" Hazardous Waste & Substances Sites List
Notify 65........................ Proposition 65 Records
Toxic Pits........................ Toxic Pits Cleanup Act Sites
SWF/LF........................ Solid Waste Information System
WMUDS/SWAT........................ Waste Management Unit Database
LUST........................ Geotracker's Leaking Underground Fuel Tank Report
CA BOND EXP. PLAN........................ Bond Expenditure Plan
UST........................ List of Underground Storage Tank Facilities
VCP........................ Voluntary Cleanup Program Properties
INDIAN LUST........................ Leaking Underground Storage Tanks on Indian Land
INDIAN UST........................ Underground Storage Tanks on Indian Land
CA FID UST........................ Facility Inventory Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT........................ Superfund (CERCLA) Consent Decrees
ROD........................ Records Of Decision
Delisted NPL........................ National Priority List Deletions
FINDS........................ Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS........................ Hazardous Materials Information Reporting System
MLTS........................ Material Licensing Tracking System
MINES........................ Mines Master Index File
NPL Liens........................ Federal Superfund Liens
PADS........................ PCB Activity Database System
US ENG CONTROLS........................ Engineering Controls Sites List
ODI........................ Open Dump Inventory
DOD........................ Department of Defense Sites
INDIAN RESERV........................ Indian Reservations
UMTRA........................ Uranium Mill Tailings Sites
FUDS........................ Formerly Used Defense Sites
RAATS........................ RCRA Administrative Action Tracking System
TRIS........................ Toxic Chemical Release Inventory System
TSCA........................ Toxic Substances Control Act
SSTS........................ Section 7 Tracking Systems
FTTS INSP........................ FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST........................ Aboveground Petroleum Storage Tank Facilities
CLEANERS........................ Cleaner Facilities
CA WDS........................ Waste Discharge System
DEED........................ Deed Restriction Listing

NFA........................... No Further Action Determination
WIP........................... Well Investigation Program Case List
EMI........................... Emissions Inventory Data
REF........................... Unconfirmed Properties Referred to Another Agency
SCH........................... School Property Evaluation Program
NFE........................... Properties Needing Further Evaluation
CA SLIC....................... Statewide SLIC Cases
HAZNET........................ Facility and Manifest Data
San Diego Co. HMMD............ Hazardous Materials Management Division Database

BROWNFIELDS DATABASES

US BROWNFIELDS............ A Listing of Brownfields Sites
US INST CONTROL........... Sites with Institutional Controls
VCP....................... Voluntary Cleanup Program Properties

EDR PROPRIETARY HISTORICAL DATABASES

See the EDR Proprietary Historical Database Section for details

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EDR PROPRIETARY HISTORICAL DATABASES

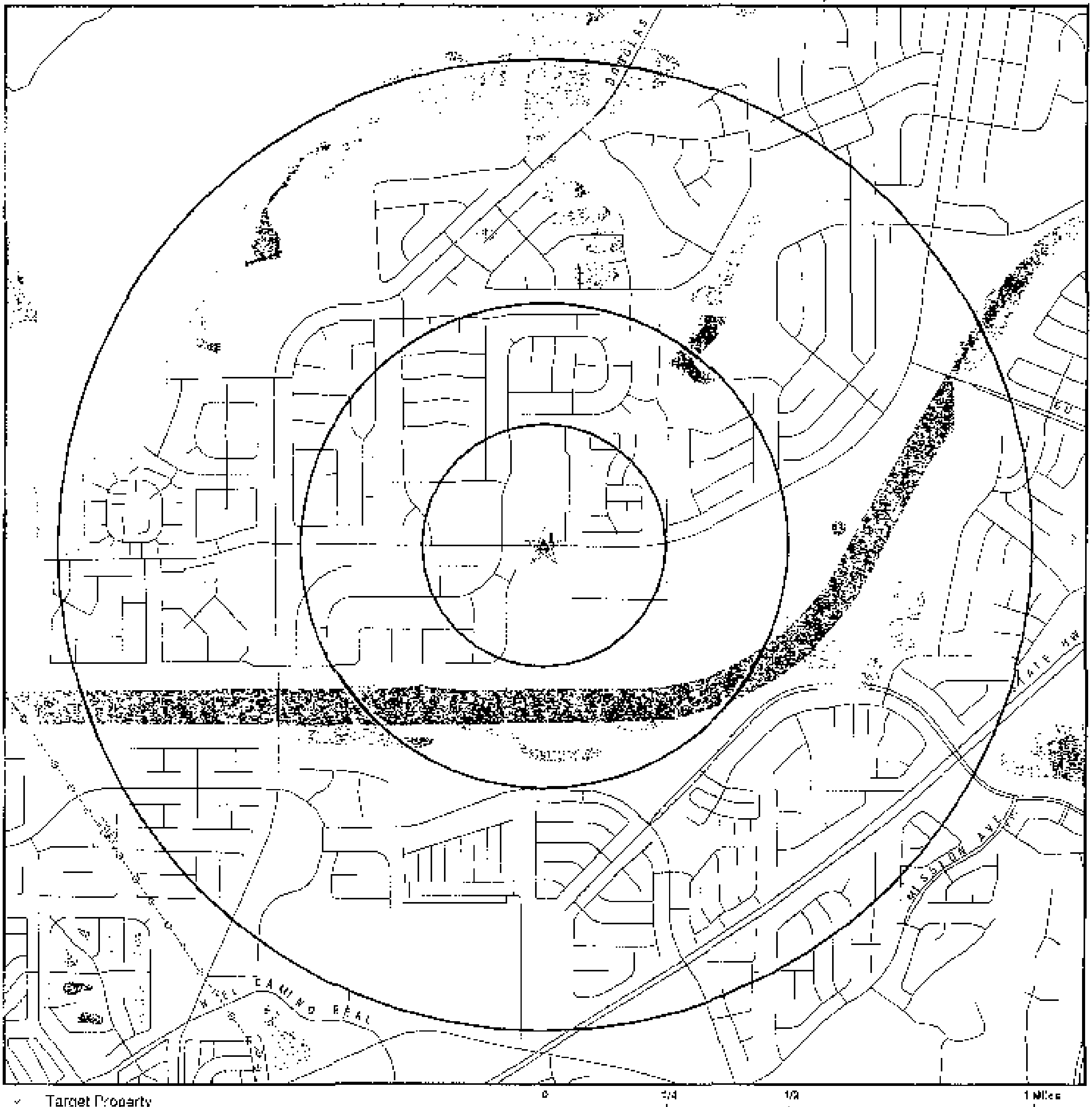
See the EDR Proprietary Historical Database Section for details

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
GAVILAN PLATEAU MANEUVER AREA	Cal-Sites, AWP
1664 OCEANSIDE BLVD	Notify 65
VISTA BURNSITE	SWF/LF
MAXSON STREET LF	SWF/LF
1X OCEANSIDE UNIFIED SCHOOL DISTRICT	HAZNET
DOCKED AT I-42 OCEANSIDE HARBOR	ERNS
WEST END OF OCEANSIDE AIRPORT ON SOUTH BANK	ERNS
3 MILES WEST OF OCEANSIDE	ERNS
LA SALINA WWTP, OCEANSIDE OTFL	CA WDS
OCEANSIDE AQUATIC PESTIC-WEED	CA WDS
HI HOPE RANCH HIGH SCHOOL	SCH

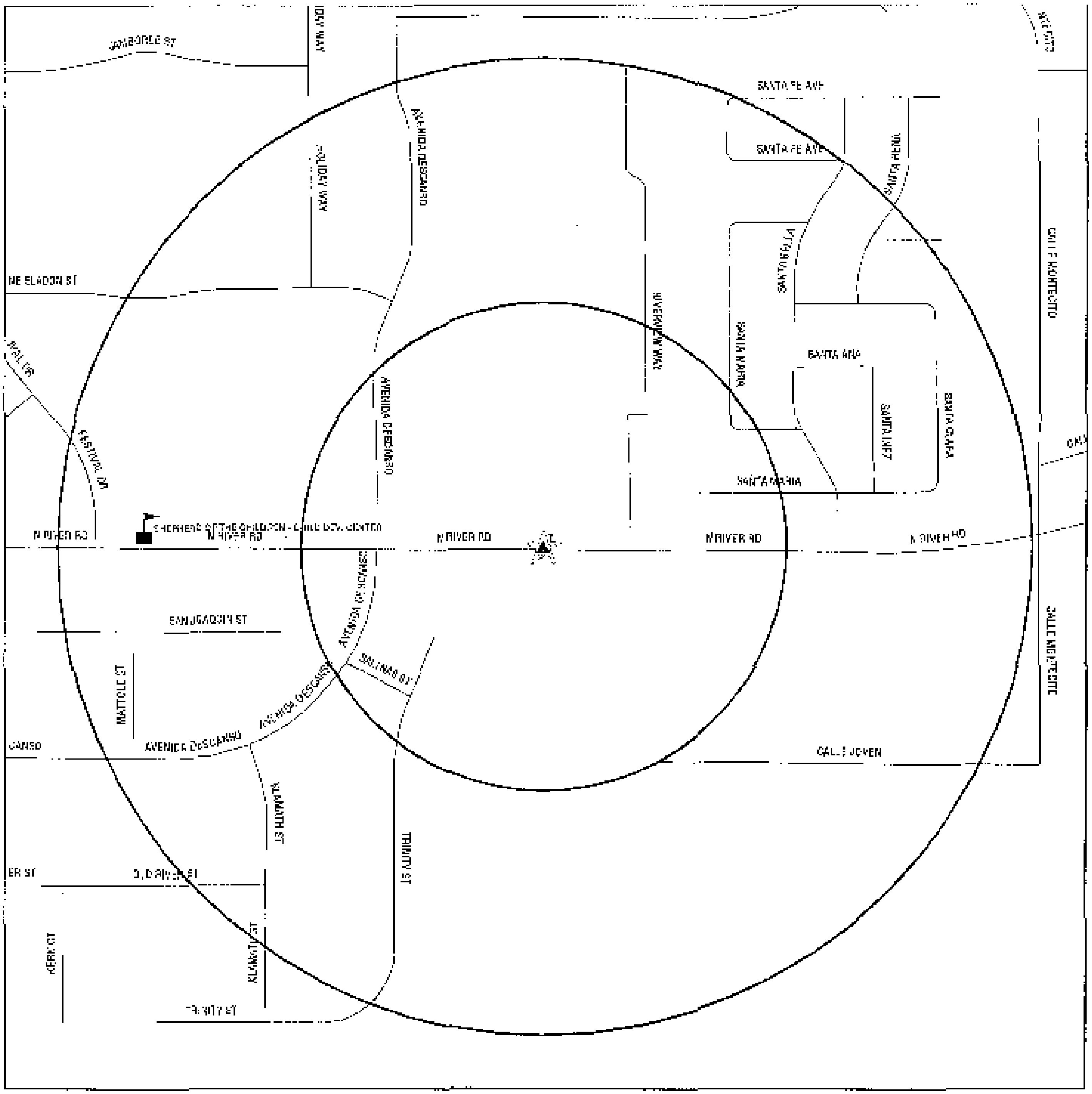
OVERVIEW MAP - 1425996.2s - SECOR International, Inc.



- Target Property
- ▲ Sites at elevations higher than or equal to the target property
- • Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Olson - Oceanside	CUSTOMER:	SECOR International, Inc.
ADDRESS:	4617 North River Road	CONTACT:	Justin Hone
CITY/STATE/ZIP:	Oceanside CA 92057	INQUIRY #:	1425996.2s
LAT/LONG:	33.2453 / 117.3131	DATE:	May 20, 2005 7:39 am

DETAIL MAP - 1425996.2s - SECOR International, Inc.



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Coal Gasification Sites

Historical Gas Stations / Historical Dry Cleaners See the EDR Proprietary Historical Map Findings

Sensitive Receptors

National Priority List Sites

Landfill Sites

Dept. Defense Sites

Indian Reservations BIA

Oil & Gas pipelines

Areas of Concern

TARGET PROPERTY:	Olson - Oceanside	CUSTOMER:	SECOR International, Inc.
ADDRESS:	4617 North River Road	CONTACT:	Justin Hone
CITY/STATE/ZIP:	Oceanside CA 92057	INQUIRY #:	1425996.2s
LAT/LONG:	33.2453 / 117.3131	DATE:	May 20, 2005 7:39 am

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
HIST UST	X	0.250	0	0	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
FUDS		1.000	0	0	0	0	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		0.500	0	0	0	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
San Diego Co. HMMD		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Gas Stations/Dry Cleaners		0.250	0	0	NR	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0

NOTES:

See the EDR Proprietary Historical Database Section for details

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
1 **Target Property**	**NAGATA BROS. FARMS** **4617 N RIVER RD** **OCEANSIDE, CA 92068**	**HIST UST**	**U001572184** **N/A**

Actual: **71 ft.**

UST HIST:

Facility ID:	49312	Owner Name:	NAGATA BROS. FARMS
Total Tanks:	3	Region:	STATE
Owner Address:	4617 N. RIVER ROAD SAN LUIS REY, CA 92068		
Tank Used for:	PRODUCT		
Tank Num:	1	Container Num:	N-1
Tank Capacity:	00001000	Year Installed:	1978
Type of Fuel:	DIESEL	Tank Construction:	Not Reported
Leak Detection:	Visual		
Contact Name:	GEORGE NAGATA	Telephone:	(619) 757-1382
Facility Type:	Other	Other Type:	FARM

Facility ID:	49312	Owner Name:	NAGATA BROS. FARMS
Total Tanks:	3	Region:	STATE
Owner Address:	4617 N. RIVER ROAD SAN LUIS REY, CA 92068		
Tank Used for:	PRODUCT		
Tank Num:	2	Container Num:	N-2
Tank Capacity:	00000550	Year Installed:	Not reported
Type of Fuel:	UNLEADED	Tank Construction:	Not Reported
Leak Detection:	Visual		
Contact Name:	GEORGE NAGATA	Telephone:	(619) 757-1382
Facility Type:	Other	Other Type:	FARM

Facility ID:	49312	Owner Name:	NAGATA BROS. FARMS
Total Tanks:	3	Region:	STATE
Owner Address:	4617 N. RIVER ROAD SAN LUIS REY, CA 92068		
Tank Used for:	PRODUCT		
Tank Num:	3	Container Num:	N-3
Tank Capacity:	00010000	Year Installed:	1978
Type of Fuel:	REGULAR	Tank Construction:	Not Reported
Leak Detection:	Visual		
Contact Name:	GEORGE NAGATA	Telephone:	(619) 757-1382
Facility Type:	Other	Other Type:	FARM

MAP FINDINGS - EDR PROPRIETARY HISTORICAL DATABASES

YEAR	NAME	ADDRESS	CITY	ST	DIR.	DIST.	ELEV.	TYPE

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

EDR Historical Gas Station & Dry Cleaner Search: No mapped sites were found in EDR's search of the EDR Historical Gas Station & Dry Cleaner Database within 0.250 mile of the Target Property.

City	EDR ID	Site Name	Site Address	Zip	Database(s)
OCEANSIDE	S105155616	VISTA BURNSITE	NORTH AVENUE / SYCAMORE DR.		SWF/LF
OCEANSIDE	S105155592	MAXSON STREET LF	1800 BLK. MAXSON ST.		SWF/LF
OCEANSIDE	99640637	DOCKED AT I-42 OCEANSIDE HARBOR	DOCKED AT I-42 OCEANSIDE HARBOR		ERNS
OCEANSIDE	93301513	WEST END OF OCEANSIDE AIRPORT ON SOUTH BANK	WEST END OF OCEANSIDE AIRPORT ON SOUTH BANK		ERNS
OCEANSIDE	S106153067	HI HOPE RANCH HIGH SCHOOL	MELROSE DRIVE/HIGHWAY 76	92067	SCH
OCEANSIDE	98426424	3 MILES WEST OF OCEANSIDE	3 MILES WEST OF OCEANSIDE		ERNS
OCEANSIDE	S103879276	1X OCEANSIDE UNIFIED SCHOOL DISTRICT	MISSION ELEMENTARY		HAZNET
OCEANSIDE	S100179724	1664 OCEANSIDE BLVD	OCEANSIDE BLVD PUMP STA.		Notify 65
OCEANSIDE	S106105435	LA SALINA WWTP, OCEANSIDE OTFL	1350 SOUTH TAITE STREET		CA WDS
OCEANSIDE	S106105404	OCEANSIDE AQUATIC PESTIC-WTTD	VARIOUS SITES IN OCEANSIDE		CA WDS
PERRIS	S105481914	GAVILAN PLATEAU MANEUVER AREA	S35, T4 SOUTH, R5 WEST	92057	Cal-Sites, AWP

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/28/05
Date Made Active at EDR: 05/16/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/04/05
Elapsed ASTM days: 12
Date of Last EDR Contact: 05/04/05

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 04/27/05
Date Made Active at EDR: 05/16/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/04/05
Elapsed ASTM days: 12
Date of Last EDR Contact: 05/04/05

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/15/05
Date Made Active at EDR: 04/06/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/22/05
Elapsed ASTM days: 15
Date of Last EDR Contact: 03/22/05

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 03/22/05
Date Made Active at EDR: 04/06/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/01/05
Elapsed ASTM days: 5
Date of Last EDR Contact: 04/01/05

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/29/05
Date Made Active at EDR: 05/16/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/11/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 03/07/05

RCRA: Resource Conservation and Recovery Act Information
Source: EPA
Telephone: 800-424-9346
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/13/05
Date Made Active at EDR: 04/25/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/23/05
Elapsed ASTM days: 33
Date of Last EDR Contact: 03/23/05

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04
Date Made Active at EDR: 03/24/05
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/05
Elapsed ASTM days: 56
Date of Last EDR Contact: 04/25/05

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially

Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 06/13/05

CONSENT: Superfund (CERCLA) Consent Decrees
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/04
Database Release Frequency: Varies

Date of Last EDR Contact: 04/26/05
Date of Next Scheduled EDR Contact: 07/25/05

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/10/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/28/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/04/05
Date of Next Scheduled EDR Contact: 08/01/05

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/11/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/04
Database Release Frequency: Annually

Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/18/05

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/12/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/11/05 | Date of Last EDR Contact: 03/30/05
Database Release Frequency: Semi-Annually | Date of Next Scheduled EDR Contact: 06/27/05

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91 | Date of Last EDR Contact: 02/22/05
Database Release Frequency: No Update Planned | Date of Next Scheduled EDR Contact: 05/23/05

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/21/04 | Date of Last EDR Contact: 02/23/05
Database Release Frequency: Annually | Date of Next Scheduled EDR Contact: 05/09/05

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-692-8801
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03 | Date of Last EDR Contact: 02/08/05
Database Release Frequency: Semi-Annually | Date of Next Scheduled EDR Contact: 05/09/05

UMTRA: Uranium Mill Tailings Sites
Source: Department of Energy
Telephone: 505-845-0011
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04 | Date of Last EDR Contact: 03/22/05
Database Release Frequency: Varies | Date of Next Scheduled EDR Contact: 06/20/05

ODI: Open Dump Inventory
Source: Environmental Protection Agency
Telephone: 800-424-9346
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85 | Date of Last EDR Contact: 05/23/95
Database Release Frequency: No Update Planned | Date of Next Scheduled EDR Contact: N/A

FUDS: Formerly Used Defense Sites
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/03
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

INDIAN RESERV: Indian Reservations
Source: USGS
Telephone: 202-208-3710
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05
Date of Next Scheduled EDR Contact: 05/09/05

US ENG CONTROLS: Engineering Controls Sites List
Source: Environmental Protection Agency
Telephone: 703-603-8867
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/10/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 03/22/05
Date of Next Scheduled EDR Contact: 06/20/05

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 04/05/05
Date of Next Scheduled EDR Contact: 06/06/05

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-566-1667

Date of Government Version: 04/13/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/21/05
Date of Next Scheduled EDR Contact: 06/20/05

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Database Release Frequency: Annually
Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/18/05

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/13/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/21/05
Date of Next Scheduled EDR Contact: 06/20/05

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 02/07/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Annually
Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 03/01/05

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 02/07/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 03/01/05

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03
Date Made Active at EDR: 06/25/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 05/18/04
Elapsed ASTM days: 38
Date of Last EDR Contact: 02/23/05

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 04/25/05

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 04/15/05

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 02/01/05

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/14/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/15/05
Elapsed ASTM days: 21
Date of Last EDR Contact: 03/15/05

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 03/07/05

LUST: Geotracker's Leaking Underground Fuel Tank Report
Source: State Water Resources Control Board
Contact: San Diego County Dept of Env Health, (619) 338-2395
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/10/05
Date Made Active at EDR: 02/21/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/10/05
Elapsed ASTM days: 42
Date of Last EDR Contact: 04/13/05

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Contact: San Diego County Dept of Env Health, (619) 338-2395
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/12/05
Date Made Active at EDR: 05/06/05
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/13/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 04/13/05

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/07/05
Date Made Active at EDR: 03/31/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 30
Date of Last EDR Contact: 03/01/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: Environmental Protection Agency
Telephone: 415-972-3372
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/18/05
Date Made Active at EDR: 04/13/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 03/21/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 02/22/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 10
Telephone: 206-553-2857
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/02/05
Date Made Active at EDR: 03/28/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 02/02/05
Elapsed ASTM days: 54
Date of Last EDR Contact: 01/31/05

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 11/02/04
Date Made Active at EDR: 12/13/04
Database Release Frequency: Varies

Date of Data Arrival at EDR: 11/03/04
Elapsed ASTM days: 40
Date of Last EDR Contact: 02/22/05

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-341-5851
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5851
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 02/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/24/05
Date of Next Scheduled EDR Contact: 05/02/05

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 04/18/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/04/05

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-341-5227
Sites which have been issued waste discharge requirements.

Date of Government Version: 03/21/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/22/05
Date of Next Scheduled EDR Contact: 06/20/05

DEED: Deed Restriction Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/05/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 02/07/05 — Date of Last EDR Contact: 03/01/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 05/30/05

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/02 — Date of Last EDR Contact: 04/22/05
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 07/18/05

WIP: Well Investigation Program Case List
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 04/26/05 — Date of Last EDR Contact: 04/25/05
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 07/25/05

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 02/07/05 — Date of Last EDR Contact: 03/01/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 05/30/05

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/07/05 — Date of Last EDR Contact: 03/01/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 05/30/05

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 02/07/05 — Date of Last EDR Contact: 03/01/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 05/30/05

SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Contact: San Diego County Dept of Env Health, (619) 338-2395
The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 04/12/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/13/05
Date of Next Scheduled EDR Contact: 07/11/05

HAZNET: Facility and Manifest Data
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 02/17/05
Date of Next Scheduled EDR Contact: 05/09/05

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 02/15/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/04/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05
Date of Next Scheduled EDR Contact: 05/30/05

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/19/05
Date of Next Scheduled EDR Contact: 05/09/05

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 12/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 02/01/05
Database Release Frequency: Varies

Date of Last EDR Contact: 02/15/05
Date of Next Scheduled EDR Contact: 05/16/05

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 03/24/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05
Date of Next Scheduled EDR Contact: 05/16/05

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/05
Database Release Frequency: Varies

Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 02/28/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/09/05
Database Release Frequency: Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 02/08/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/31/05
Date of Next Scheduled EDR Contact: 05/02/05

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/29/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/28/05
Date of Next Scheduled EDR Contact: 06/27/05

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/29/05
Database Release Frequency: Annually

Date of Last EDR Contact: 03/28/05
Date of Next Scheduled EDR Contact: 06/27/05

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/11/05
Date of Next Scheduled EDR Contact: 06/06/05

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 03/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/11/05
Date of Next Scheduled EDR Contact: 06/06/05

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 03/01/05 | Date of Last EDR Contact: 03/11/05
Database Release Frequency: Annually | Date of Next Scheduled EDR Contact: 06/06/05

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 04/05/05 | Date of Last EDR Contact: 03/21/05
Database Release Frequency: Semi-Annually | Date of Next Scheduled EDR Contact: 06/20/05

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 02/14/05 | Date of Last EDR Contact: 04/18/05
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 07/18/05

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 02/14/05 | Date of Last EDR Contact: 04/18/05
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 07/18/05

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 12/30/04 | Date of Last EDR Contact: 02/04/05
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 05/02/05

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 12/30/04 | Date of Last EDR Contact: 02/04/05
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 05/02/05

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/25/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 02/22/05
Date of Next Scheduled EDR Contact: 05/23/05

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 08/29/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/22/05
Date of Next Scheduled EDR Contact: 07/04/05

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 03/09/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 03/09/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/28/05 — Date of Last EDR Contact: 04/11/05
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 07/11/05

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 03/29/05 — Date of Last EDR Contact: 03/29/05
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 06/27/05

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 01/14/05 — Date of Last EDR Contact: 03/07/05
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 06/06/05

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770

Date of Government Version: 04/18/05 — Date of Last EDR Contact: 04/18/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 06/13/05

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770

Date of Government Version: 04/18/05 — Date of Last EDR Contact: 04/18/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 06/13/05

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 04/25/05 — Date of Last EDR Contact: 04/25/05
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 07/25/05

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 01/29/04 — Date of Last EDR Contact: 04/18/05
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 07/04/05

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/04
Database Release Frequency: Annually
Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/01/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/30/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/11/05

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/01/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 01/18/05
Database Release Frequency: Annually
Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/18/05

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 09/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/04
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/29/05
Date of Next Scheduled EDR Contact: 06/27/05

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291

Date of Government Version: 04/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/04/05

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 04/12/05
Date of Next Scheduled EDR Contact: 06/06/05

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 06/09/04
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/04/05

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 02/26/04
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/29/05
Date of Next Scheduled EDR Contact: 06/27/05

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-4130
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/05
Database Release Frequency: Varies

Date of Last EDR Contact: 02/08/05
Date of Next Scheduled EDR Contact: 05/09/05

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/18/05

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/30/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/21/05
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/23/05

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/17/04
Database Release Frequency: Varies
Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 04/01/05
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/05/05
Date of Next Scheduled EDR Contact: 07/04/05

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/07/04
Database Release Frequency: Varies
Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 01/25/05
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/04/05

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 11/24/04
Database Release Frequency: Varies

Date of Last EDR Contact: 02/22/05
Date of Next Scheduled EDR Contact: 05/23/05

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298

Date of Government Version: 07/01/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/06/05
Date of Next Scheduled EDR Contact: 07/04/05

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 09/10/04
Database Release Frequency: Annually

Date of Last EDR Contact: 03/01/05
Date of Next Scheduled EDR Contact: 05/30/05

EDR PROPRIETARY HISTORICAL DATABASES

EDR Historical Gas Station and Dry Cleaners: EDR has searched select national collections of business directories and has collected listings of potential dry cleaner and gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning and gas station/filling station/service station establishments. The categories reviewed included, but were not limited to: *gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, dry cleaner, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.*

This information is meant to assist and complement environmental professionals in their conduct of environmental site assessments, and is not meant to be a substitute for a full historical investigation as defined in ASTM E1527. The information provided in this proprietary database may or may not be complete; i.e., the absence of a dry cleaner or gas station/filling station/service station site does not necessarily mean that such a site did not exist in the area covered by this report.

(A note on "dry cleaning" sites: it is not possible for EDR to differentiate between establishments that use PERC on-site as a cleaning solvent and sites that function simply as drop-off and pick-up locations or that are traditional wet cleaning/laundry facilities. Therefore, it is essential for environmental professionals to incorporate professional judgment in the evaluation of each site.)

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/07/05 | Date of Last EDR Contact: 03/01/05
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 05/30/05

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 01/10/05 | Date of Last EDR Contact: 03/14/05
Database Release Frequency: Semi-Annually | Date of Next Scheduled EDR Contact: 06/13/05

US INST CONTROL: Sites with Institutional Controls
Source: Environmental Protection Agency
Telephone: 703-603-8867
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05 | Date of Last EDR Contact: 04/04/05
Database Release Frequency: Varies | Date of Next Scheduled EDR Contact: 07/04/05

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

OLSON - OCEANSIDE
4617 NORTH RIVER ROAD
OCEANSIDE, CA 92057

TARGET PROPERTY COORDINATES

Latitude (North):	33.245300 - 33° 14' 43.1"
Longitude (West):	117.313103 - 117° 18' 47.2"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	470832.0
UTM Y (Meters):	3678333.2
Elevation:	71 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

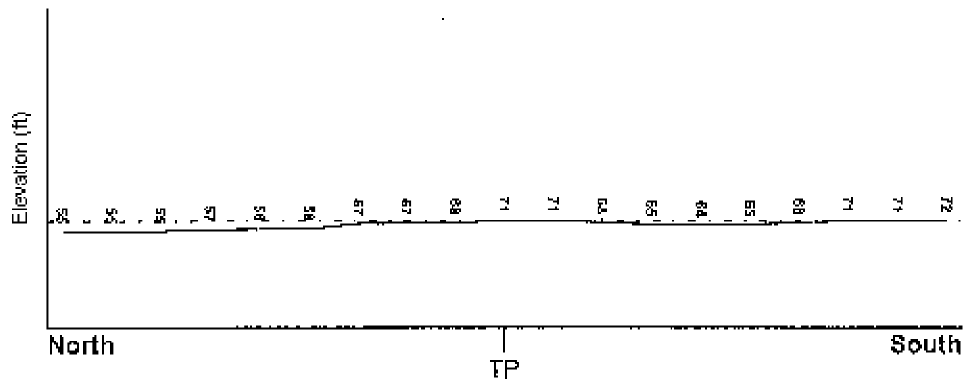
TOPOGRAPHIC INFORMATION

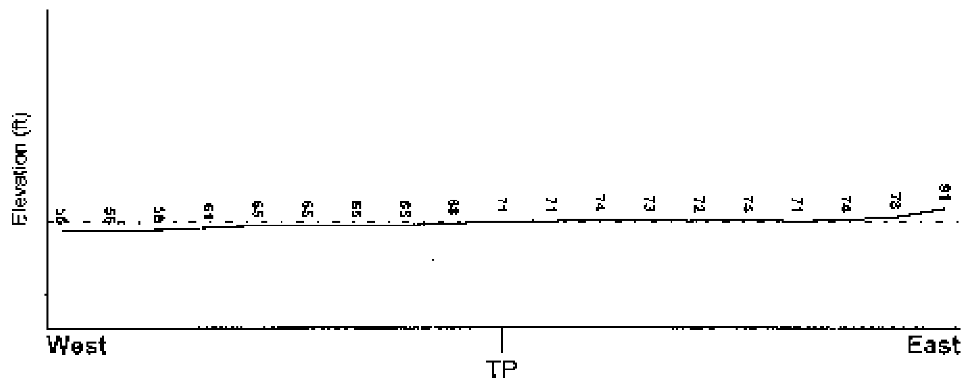
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	33117-B3 SAN LUIS REY, CA
General Topographic Gradient:	General West
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 71 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN DIEGO, CA	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SAN LUIS REY	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data**:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	TUJUNGA
Soil Surface Texture:	sand
Hydrologic Group:	Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
Soil Drainage Class:	Somewhat excessive. Soils have high hydraulic conductivity and low water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	12 inches	sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 7.30 Min: 6.10
2	12 inches	48 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 7.80 Min: 6.10
3	48 inches	60 inches	stratified	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 20.00 Min: 6.00	Max: 7.80 Min: 6.10

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures:
- sandy loam
- very gravelly - coarse sand
- gravelly - sandy loam
- clay loam
- loam
- very gravelly - sandy loam

Surficial Soil Types:
- sandy loam
- very gravelly - coarse sand
- gravelly - sandy loam
- clay loam
- loam
- very gravelly - sandy loam

Shallow Soil Types:
- fine sandy loam
- gravelly - loam

Deeper Soil Types:
- very fine sandy loam

shaly - loam
gravelly - sandy loam

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS3128396	0 - 1/8 Mile East
A2	USGS3128384	0 - 1/8 Mile SE
A3	USGS3128397	0 - 1/8 Mile West
A4	USGS3128367	0 - 1/8 Mile SSW
B5	USGS3128368	0 - 1/8 Mile SW
B6	USGS3128360	0 - 1/8 Mile SSW
7	USGS3128437	1/8 - 1/4 Mile NNW
C8	USGS3128416	1/8 - 1/4 Mile ENE
9	USGS3128363	1/8 - 1/4 Mile SE
D10	USGS3128551	1/8 - 1/4 Mile SSW
D11	USGS3128550	1/8 - 1/4 Mile SSW
C12	USGS3128423	1/8 - 1/4 Mile ENE
D13	USGS3128543	1/8 - 1/4 Mile SSW
E14	USGS3128362	1/8 - 1/4 Mile ESE
E15	USGS3128383	1/8 - 1/4 Mile East
F16	USGS3128385	1/8 - 1/4 Mile West
17	USGS3128517	1/4 - 1/2 Mile South
18	USGS3128537	1/4 - 1/2 Mile SE
19	USGS3128382	1/4 - 1/2 Mile East
F20	USGS3128419	1/4 - 1/2 Mile West
F21	USGS3128369	1/4 - 1/2 Mile West
F22	USGS3128405	1/4 - 1/2 Mile West
F23	USGS3128406	1/4 - 1/2 Mile West
G24	USGS3221545	1/4 - 1/2 Mile West

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
G25	USGS3131587	1/4 - 1/2 Mile West
G26	USGS3128407	1/4 - 1/2 Mile West
G27	USGS3221546	1/4 - 1/2 Mile West
G28	USGS3128408	1/4 - 1/2 Mile West
29	USGS3128516	1/4 - 1/2 Mile SE
30	USGS3128381	1/4 - 1/2 Mile East
G31	USGS3128370	1/4 - 1/2 Mile West
32	USGS3128398	1/4 - 1/2 Mile West
H33	USGS3128395	1/4 - 1/2 Mile East
H34	USGS3128394	1/4 - 1/2 Mile East
H35	USGS3128374	1/4 - 1/2 Mile East
I36	USGS3128448	1/2 - 1 Mile ENE
J37	USGS3129459	1/2 - 1 Mile SSW
38	USGS3128399	1/2 - 1 Mile West
39	USGS3128393	1/2 - 1 Mile East
K40	USGS3128369	1/2 - 1 Mile West
I41	USGS3128272	1/2 - 1 Mile ENE
42	USGS3128652	1/2 - 1 Mile SSW
L43	USGS3128338	1/2 - 1 Mile NW
L44	USGS3128337	1/2 - 1 Mile NW
K45	USGS3128544	1/2 - 1 Mile WSW
J46	USGS3128449	1/2 - 1 Mile SSW
M47	USGS3128473	1/2 - 1 Mile SW
48	USGS3128488	1/2 - 1 Mile SW
N49	USGS3128456	1/2 - 1 Mile SSE
N50	USGS3128457	1/2 - 1 Mile SSE
51	USGS3128515	1/2 - 1 Mile WSW
M52	USGS3128468	1/2 - 1 Mile SW
53	USGS3128642	1/2 - 1 Mile SSE
O54	USGS3128417	1/2 - 1 Mile East
P55	USGS3128640	1/2 - 1 Mile SSW
Q56	USGS3128455	1/2 - 1 Mile SE
R57	USGS3128400	1/2 - 1 Mile West
R58	USGS3128401	1/2 - 1 Mile West
O59	USGS3128432	1/2 - 1 Mile East
O60	USGS3128392	1/2 - 1 Mile East
S61	USGS3128513	1/2 - 1 Mile ESE
S62	USGS3128514	1/2 - 1 Mile ESE
O63	USGS3128391	1/2 - 1 Mile East
O64	USGS3128390	1/2 - 1 Mile East
P65	USGS3128617	1/2 - 1 Mile SSW
T66	USGS3128262	1/2 - 1 Mile ENE
T67	USGS3128263	1/2 - 1 Mile ENE
Q68	USGS3128656	1/2 - 1 Mile SE
U69	USGS3128454	1/2 - 1 Mile SE
U70	USGS3128452	1/2 - 1 Mile SE
U71	USGS3128453	1/2 - 1 Mile SE
U72	USGS3128465	1/2 - 1 Mile SE
73	USGS3128209	1/2 - 1 Mile North
V74	USGS3128599	1/2 - 1 Mile SSE
75	USGS3128464	1/2 - 1 Mile SE
W76	USGS3128637	1/2 - 1 Mile SW

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
X77	USGS3128600	1/2 - 1 Mile SSW
V78	USGS3128598	1/2 - 1 Mile SSE
79	USGS3128442	1/2 - 1 Mile East
Y80	USGS3128389	1/2 - 1 Mile East
Y81	USGS3128380	1/2 - 1 Mile East
W82	USGS3128565	1/2 - 1 Mile SW
83	USGS3128518	1/2 - 1 Mile WSW
Z84	USGS3128303	1/2 - 1 Mile ENE
85	USGS3128480	1/2 - 1 Mile WSW
Z86	USGS3128313	1/2 - 1 Mile ENE
X87	USGS3128581	1/2 - 1 Mile SSW
X88	USGS3128580	1/2 - 1 Mile SSW
89	USGS3128458	1/2 - 1 Mile WSW
90	USGS3128601	1/2 - 1 Mile SW
AA91	USGS3128568	1/2 - 1 Mile SSW
AA92	USGS3128567	1/2 - 1 Mile SSW
AB93	USGS3128556	1/2 - 1 Mile SSE
AB94	USGS3128555	1/2 - 1 Mile SSE
95	USGS3128626	1/2 - 1 Mile SE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

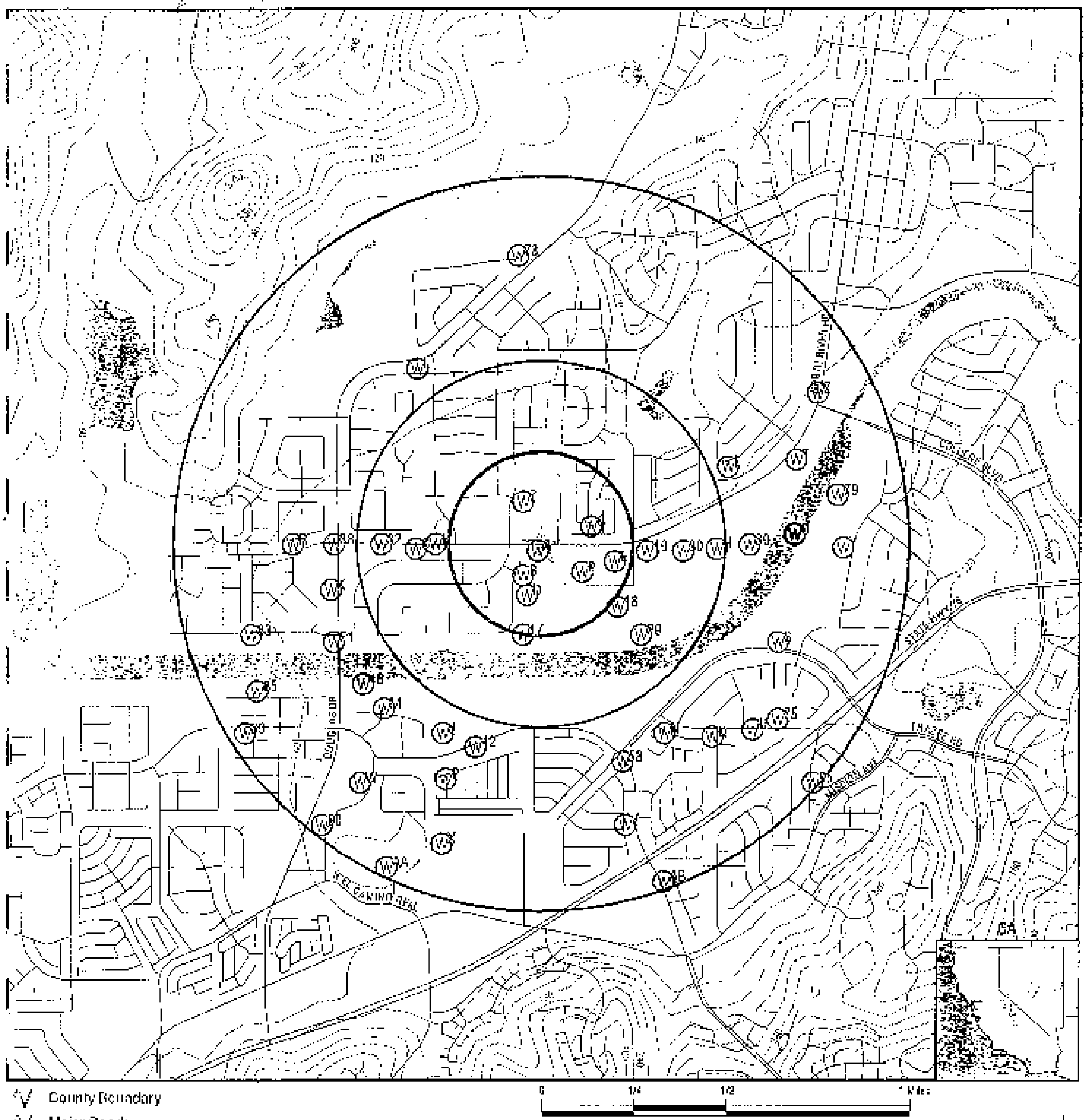
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 1425996.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

TARGET PROPERTY:	Olson - Oceanside	CUSTOMER:	SECOR International, Inc.
ADDRESS:	4617 North River Road	CONTACT:	Justin Hone
CITY/STATE/ZIP:	Oceanside CA 92057	INQUIRY #:	1425996.2s
LAT/LONG:	33.2453 / 117.3131	DATE:	May 20, 2005 7:39 am

Map ID
Direction
Distance
Elevation

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
A1 **East** **0 - 1/8 Mile** **Higher**	**FED USGS**	**USGS3128398**

Agency cd:	USGS	Site no:	331443117184301
Site name:	011S004W04M003S		
Latitude:	331443		
Longitude:	1171843	Dec lat:	33.24531267
Dec lon:	-117.31281483	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	68.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1922
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	121	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels. Number of Measurements: 0

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
A2 **SE** **0 - 1/8 Mile** **Higher**	**FED USGS**	**USGS3128384**

Agency cd:	USGS	Site no:	331442117184301
Site name:	011S004W04Z001S		
Latitude:	331442		
Longitude:	1171843	Dec lat:	33.2450349
Dec lon:	-117.31281483	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	67.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

A3
West
0 - 1/8 Mile
Higher

FED USGS **USGS3128397**

Agency cd:	USGS	Site no:	331443117184601
Site name:	011S004W04M004S		
Latitude:	331443		
Longitude:	1171846	Dec lat:	33.24531266
Dec lon:	-117.31364819	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1948
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	114	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	59.00	

A4
SSW
0 - 1/8 Mile
Higher

FED USGS **USGS3128367**

Agency cd:	USGS	Site no:	331440117184601
Site name:	011S004W04N001S		
Latitude:	331440		
Longitude:	1171846	Dec lat:	33.24447936
Dec lon:	-117.31364819	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1952
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	131	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-08-12
Water quality data end date:	1967-03-22	Water quality data count:	22
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	61.00	

B5
SW
0 - 1/8 Mile
Higher

FED USGS **USGS3128368**

Agency cd:	USGS	Site no:	331440117184801
Site name:	011S004W05R004S		
Latitude:	331440		
Longitude:	1171848	Dec lat:	33.24447938
Dec lon:	-117.31420376	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1911
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

B6
SSW
0 - 1/8 Mile
Higher

FED USGS **USGS3128350**

Agency cd:	USGS	Site no:	331437117184601
Site name:	011S004W04N002S		
Latitude:	331437		
Longitude:	1171846	Dec lat:	33.24364805
Dec lon:	-117.31364819	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 768 sq mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	135	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

7
NNW
1/8 - 1/4 Mile
Lower

FED USGS **USGS3128437**

Agency cd:	USGS	Site no:	331449117184701
Site name:	011S004W04Z002S		
Latitude:	331449		
Longitude:	1171847	Dec lat:	33.24697927
Dec lon:	-117.31392587	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	80.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

C8
ENE
1/8 - 1/4 Mile
Higher

FED USGS **USGS3128418**

Agency cd:	USGS	Site no:	331445117193601
Site name:	011S004W04M001S		
Latitude:	331445		
Longitude:	1171936	Dec lat:	33.24586821
Dec lon:	-117.31087034	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	137	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-00
Water quality data end date:	1965-10-19	Water quality data count:	6
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
9 **SE** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS3128363**

Agency cd:	USGS	Site no:	331439117183701
Site name:	011S004W04N003S		
Latitude:	331439		
Longitude:	1171837	Dec lat:	33.2442016
Dec lon:	-117.31114813	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 768 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1948
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	137	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	64.00	

D10 **SSW** **1/8 - 1/4 Mile** **Lower**	**FED USGS**	**USGS3128551**

Agency cd:	USGS	Site no:	331436117184602
Site name:	011S004W04Z004S		
Latitude:	331436		
Longitude:	1171846	Dec lat:	33.24336829
Dec lon:	-117.3136482	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	76.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1923
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

D11
SSW
1/8 - 1/4 Mile
Lower

FED USGS USGS3128550

Agency cd:	USGS	Site no:	331436117184601
Site name:	011S004W04Z003S		
Latitude:	331436		
Longitude:	1171846	Dec lat:	33.24336829
Dec lon:	-117.3136452	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	66.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1924
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
C12 **ENE** **1/8 - 1/4 Mile** **Higher**	FED USGS	USGS3128423

Agency cd:	USGS	Site no:	331446117183501
Site name:	011S004W04M002S		
Latitude:	331446		
Longitude:	1171835	Dec lat:	33.24614598
Dec lon:	-117.31059255	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 765 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	116	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-03
Water quality data end date:	1958-10-29	Water quality data count:	2
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	63.00	

	Database	EDR ID Number
D13 **SSW** **1/8 - 1/4 Mile** **Lower**	FED USGS	USGS3128543

Agency cd:	USGS	Site no:	331435117184701
Site name:	011S004W05R001S		
Latitude:	331435		
Longitude:	1171847	Dec lat:	33.24309052
Dec lon:	-117.31392595	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1952
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	132	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-08-12
Water quality data end date:	1960-02-10	Water quality data count:	5
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	58.00	

E14
ESE
1/8 - 1/4 Mile
Higher

FED USGS **USGS3128362**

Agency cd:	USGS	Site no:	331439117183201
Site name:	011S004W04N004S		
Latitude:	331439		
Longitude:	1171832	Dec lat:	33.24420161
Dec lon:	-117.3097592	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	72.00	

E15
East
1/8 - 1/4 Mile
Higher

FED USGS USGS3128383

Agency cd:	USGS	Site no:	331442117183101
Site name:	011S004W04Z005S		
Latitude:	331442		
Longitude:	1171831	Dec lat:	33.24503491
Dec lon:	-117.30948141	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	76.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

F16
West
1/8 - 1/4 Mile
Lower

FED USGS USGS3128385

Agency cd:	USGS	Site no:	331442117185901
Site name:	011S004W05R005S		
Latitude:	331442		
Longitude:	1171859	Dec lat:	33.24503488
Dec lon:	-117.31726939	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	66.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 768 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1930
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

17
South
1/4 - 1/2 Mile
Lower

FED USGS USGS3128517

Agency cd:	USGS	Site no:	331430117184701
Site name:	011S004W05R002S		
Latitude:	331430		
Longitude:	1171847	Dec lat:	33.24170168
Dec lon:	-117.31392599	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	64.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 768 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	22.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

18
SE
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128537**

Agency cd:	USGS	Site no:	331434117183101
Site name:	011S004W04P003S		
Latitude:	331434		
Longitude:	1171831	Dec lat:	33.24281277
Dec lon:	-117.30948142	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	68.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 786 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	137	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	64.00	

19
East
1/4 - 1/2 Mile
Higher

FED USGS **USGS3128382**

Agency cd:	USGS	Site no:	331442117182601
Site name:	011S004W04P002S		
Latitude:	331442		
Longitude:	1171826	Dec lat:	33.24503492
Dec lon:	-117.30809249	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	71.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	62.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1964-11-15	Water quality data count:	6
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

F20
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128419**

Agency cd:	USGS	Site no:	331445117190201
Site name:	011S004W05K006S		
Latitude:	331445		
Longitude:	1171902	Dec lat:	33.24586818
Dec lon:	-117.31809274	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1952
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	119	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1957-10-22
Water quality data end date:	1965-10-19	Water quality data count:	9
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	55.00	

F21
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128369**

Agency cd	USGS	Site no:	331440117190201
Site name:	011S004W05Q001S		
Latitude:	331440		
Longitude:	1171902	Dec lat:	33.24447934
Dec lon:	-117.31809275	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1937
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	148	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1957-10-22
Water quality data end date:	1965-10-19	Water quality data count:	8
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	55.00	

F22
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128405**

Agency cd:	USGS	Site no:	331444117190301
Site name:	011S004W05K001S		
Latitude:	331444		
Longitude:	1171903	Dec lat:	33.24559041
Dec lon:	-117.31837053	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	62.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1953
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	207	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-08-12
Water quality data end date:	1964-11-30	Water quality data count:	18
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	56.00	

F23
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128406**

Agency cd:	USGS	Site no:	331444117190302
Site name:	011S004W05K004S		
Latitude:	331444		
Longitude:	1171903	Dec lat:	33.24559041
Dec lon:	-117.31837053	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	64.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1919
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	150	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	56.00	

G24
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3221545**

Agency cd:	USGS	Site no:	331442117190402
Site name:	011S004W05Q003S		
Latitude:	331442		
Longitude:	1171904	Dec lat:	33.24503488
Dec lon:	-117.31864832	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G25
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3131587**

Agency cd:	USGS	Site no:	331442117190401
Site name:	011S004W05Q002S		
Latitude:	331442		
Longitude:	1171904	Dec lat:	33.24503458
Dec lon:	-117.31864832	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1925
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G26
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128407**

Agency cd:	USGS	Site no:	331444117190401
Site name:	011S004W05K003S		
Latitude:	331444		
Longitude:	1171904	Dec lat:	33.24559041
Dec lon:	-117.31864831	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G27
West
1/4 - 1/2 Mile
Lower

FED USGS USGS3221546

Agency cd:	USGS	Site no:	331442117190501
Site name:	011S004W05Z001S		
Latitude:	331442		
Longitude:	1171905	Dec lat:	33.24503488
Dec lon:	-117.31809261	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	64.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1912
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G28
West
1/4 - 1/2 Mile
Lower

FED USGS USGS3128408

Agency cd:	USGS	Site no:	331444117190601
Site name:	011S004W05K002S		
Latitude:	331444		
Longitude:	1171906	Dec lat:	33.24559041
Dec lon:	-117.31920368	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1951
Date Inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	212	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-07-10
Water quality data end date:	1959-03-27	Water quality data count:	4
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	57.00	

29
SE
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128516**

Agency cd:	USGS	Site no:	331430117182701
Site name:	011S004W09C001S		
Latitude:	331430		
Longitude:	1171827	Dec lat:	33.2417317
Dec lon:	-117.30837029	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	63.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1952
Date Inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	153	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1971-10-13	Water quality data count:	4
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	63.00	

30
East
1/4 - 1/2 Mile
Higher

FED USGS USGS3128381

Agency cd:	USGS	Site no:	331442117182001
Site name:	011S004W04P001S		
Latitude:	331442		
Longitude:	1171820	Dec lat:	33.24503492
Dec lon:	-117.30642579	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	73.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis RayEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G31
West
1/4 - 1/2 Mile
Lower

FED USGS USGS3128370

Agency cd:	USGS	Site no:	331440117190901
Site name:	011S004W05Q004S		
Latitude:	331440		
Longitude:	1171908	Dec lat:	33.24447934
Dec lon:	-117.31975946	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1954
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	150	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1961-09-27
Water quality data end date:	1961-09-27	Water quality data count:	1
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	56.00	

32
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS3128398**

Agency cd:	USGS	Site no:	331443117191101
Site name:	011S004W05K005S		
Latitude:	331443		
Longitude:	1171911	Dec lat:	33.24531264
Dec lon:	-117.32059281	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1941
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	138	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-06-00
Water quality data end date:	1958-10-28	Water quality data count:	3
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	56.00	

H33
East
1/4 - 1/2 Mile
Higher

FED USGS **USGS3128395**

Agency cd:	USGS	Site no:	331443117181501
Site name:	011S004W04Q001S		
Latitude:	331443		
Longitude:	1171815	Dec lat:	33.24531269
Dec lon:	-117.30503685	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Undulating		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	96.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

H34
East
1/4 - 1/2 Mile
Higher

FED USGS **USGS3128394**

Agency cd:	USGS	Site no:	331443117181401
Site name:	011S004W04Q003S		
Latitude:	331443		
Longitude:	1171814	Dec lat:	33.2453127
Dec lon:	-117.30475907	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Undulating		
Site type:	Ground-water other than Spring	Date construction:	1936
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	66.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1959-06-27	Water quality data count:	1
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sea level
1966-02-01	63.00	

H35
East
1/4 - 1/2 Mile
Higher

FED USGS **USGS3126374**

Agency cd:	USGS	Site no:	331441117181401
Site name:	011S004W04Q005S		
Latitude:	331441		
Longitude:	1171814	Dec lat:	33.24475716
Dec lon:	-117.30475907	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	64.00	

I36
ENE
1/2 - 1 Mile
Higher

FED USGS USGS3128448

Agency cd:	USGS	Site no:	331452117181301
Site name:	011S004W04K003S		
Latitude:	331452		
Longitude:	1171813	Dec lat:	33.24781261
Dec lon:	-117.30448127	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	91.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1958-10-29	Water quality data count:	2
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

J37
SSW
1/2 - 1 Mile
Lower

FED USGS USGS3128459

Agency cd:	USGS	Site no:	331417117190001
Site name:	011S004W08Z010S		
Latitude:	331417		
Longitude:	1171900	Dec lat:	33.23809068
Dec lon:	-117.31753721	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	65.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

38
West
1/2 - 1 Mile
Lower

FED USGS USGS3128399

Agency cd:	USGS	Site no:	331443117191901
Site name:	011S004W05P002S		
Latitude:	331443		
Longitude:	1171919	Dec lat:	33.24531263
Dec lon:	-117.32281609	Coor meth:	M
Coor accr:	L	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	62.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1941
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	105	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	53.00	

39
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128393**

Agency cd:	USGS	Site no:	331443117181201
Site name:	011S004W04K006S		
Latitude:	331443.0		
Longitude:	1171812.0	Dec lat:	33.24527779
Dec lon:	-117.30333333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	SAN LUIS REY	Map scale:	24000
Altitude:	72	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19950412
Date inventoried:	20040714	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	135	Hole depth:	140
Source of depth data:	driller	Project number:	9677BHM22
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

K40
West
1/2 - 1 Mile
Lower

FED USGS **USGS3128359**

Agency cd:	USGS	Site no:	331438117191901
Site name:	011S004W05P003S		
Latitude:	331438		
Longitude:	1171919	Dec lat:	33.24392379
Dec lon:	-117.3228151	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	62.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	54.00	

I41
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS3128272**

Agency cd:	USGS	Site no:	331456117181201
Site name:	011S004W04G002S		
Latitude:	331456		
Longitude:	1171812	Dec lat:	33.24892368
Dec lon:	-117.30420349	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	91.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1961-10-05	Water quality data count:	2
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID / Direction / Distance / Elevation		Database	EDR ID Number
42 **SSW** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS3128652**

Agency cd:	USGS	Site no:	331414117185501
Site name:	011S004W08H002S		
Latitude:	331414		
Longitude:	1171855	Dec lat:	33.23725738
Dec lon:	-117.31614828	Coor meth:	M
Coor accr:	L	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	60.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1954
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	117	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-08-12
Water quality data end date:	1965-10-20	Water quality data count:	18
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	54.00	

L43 **NW** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS3128338**

Agency cd:	USGS	Site no:	331508117190502
Site name:	011S004W05G002S		
Latitude:	331508		
Longitude:	1171905	Dec lat:	33.25225685
Dec lon:	-117.31892609	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	56.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

L44
NW
1/2 - 1 Mile
Lower

FED USGS USGS3128337

Agency cd:	USGS	Site no:	331508117190501
Site name:	011S004W05G001S		
Latitude:	331508		
Longitude:	1171905	Dec lat:	33.25225685
Dec lon:	-117.31892609	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	56.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID / Direction / Distance / Elevation				Database	EDR ID Number
K45 WSW 1/2 - 1 Mile Lower				**FED USGS**	**USGS3128544**

Agency cd:	USGS	Site no:	331435117182001
Site name:	011S004W05P001S		
Latitude:	331435		
Longitude:	1171920	Dec lat:	33.24309048
Dec lon:	-117.32309288	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	61.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1921
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

J46 SSW 1/2 - 1 Mile Lower		**FED USGS**	**USGS3128449**

Agency cd:	USGS	Site no:	331415117190101
Site name:	011S004W08H004S		
Latitude:	331415		
Longitude:	1171901	Dec lat:	33.23753514
Dec lon:	-117.31781499	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	80.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	1964
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	125	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	80.00	

M47
SW
1/2 - 1 Mile
Lower

FED USGS USGS3128473

Agency cd:	USGS	Site no:	331420117191001
Site name:	011S004W08B003S		
Latitude:	331420		
Longitude:	1171910	Dec lat:	33.23892397
Dec lon:	-117.32031505	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	63.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1923
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	130	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1961-09-28
Water quality data end date:	1961-09-28	Water quality data count:	1
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	58.00	

Map ID Direction Distance Elevation			Database	EDR ID Number
49 **SW** **1/2 - 1 Mile** **Lower**			**FED USGS**	**USGS3128468**

Agency cd:	USGS	Site no:	331423117191401
Site name:	011S004W08B002S		
Latitude:	331423		
Longitude:	1171914	Dec lat:	33.23975727
Dec lon:	-117.32142619	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	58.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

N49 **SSE** **1/2 - 1 Mile** **Higher**			**FED USGS**	**USGS3128456**

Agency cd:	USGS	Site no:	331416117182301
Site name:	011S004W09F002S		
Latitude:	331416		
Longitude:	1171823	Dec lat:	33.23781295
Dec lon:	-117.30725916	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	71.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	108	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	67.00	

N50
SSE
1/2 - 1 Mile
Higher

FED USGS USGS3128457

Agency cd:	USGS	Site no:	331416117182302
Site name:	011S004W09F004S		
Latitude:	331416		
Longitude:	1171823	Dec lat:	33.23781235
Dec lon:	-117.30725916	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	154	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-10
Water quality data end date:	1963-10-25	Water quality data count:	4
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	66.00	

Map ID Direction Distance Elevation	Database	EDR ID Number
51 **WSW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS3128515**

Agency cd:	USGS	Site no:	331429117191901
Site name:	011S004W08C001S		
Latitude:	331429		
Longitude:	1171919	Dec lat:	33.24142388
Dec lon:	-117.32281511	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	57.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

M52 **SW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS3128468**

Agency cd:	USGS	Site no:	331419117191101
Site name:	011S004W08B001S		
Latitude:	331419		
Longitude:	1171911	Dec lat:	33.2386462
Dec lon:	-117.320592B4	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	61.00	Altitude method:	M
Altitude accuracy	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	1945
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	220	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-00
Water quality data end date:	1965-10-19	Water quality data count:	6
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	51.00	

53
SSE
1/2 - 1 Mile
Higher

FED USGS **USGS3128642**

Agency cd:	USGS	Site no:	331412117183001
Site name:	011S004W09F001S		
Latitude:	331412		
Longitude:	1171830	Dec lat:	33.23670187
Dec lon:	-117.30920366	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	64.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1940
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	100	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	60.00	

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

O54
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128417**

Agency cd:	USGS	Site no:	331445117180301
Site name:	011S004W04K001S		
Latitude:	331445		
Longitude:	1171803	Dec lat:	33.24586824
Dec lon:	-117.30170343	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	76.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	128	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1940-09-09
Water quality data end date:	1965-10-21	Water quality data count:	11
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	69.00	

P55
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS3128640**

Agency cd:	USGS	Site no:	331411117190001
Site name:	011S004W05H001S		
Latitude:	331411		
Longitude:	1171900	Dec lat:	33.23642407
Dec lon:	-117.31753721	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	59.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	1949
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Q56
SE
1/2 - 1 Mile
Higher

FED USGS USGS3128455

Agency cd:	USGS	Site no:	331416117181701
Site name:	011S004W09F003S		
Latitude:	331416		
Longitude:	1171817	Dec lat:	33.23781285
Dec lon:	-117.30559245	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	155	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	69.00	

R57
West
1/2 - 1 Mile
Lower

FED USGS USGS3128400

Agency cd:	USGS	Site no:	331443117192601
Site name:	011S004W05L001S		
Latitude:	331443		
Longitude:	1171926	Dec lat:	33.24531262
Dec lon:	-117.32475958	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	60.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis RoyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1933
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	210	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-10-28
Water quality data end date:	1972-09-13	Water quality data count:	10
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealeve
1966-02-01	51.00	

R58
West
1/2 - 1 Mile
Lower

FED USGS USGS3128401

Agency cd:	USGS	Site no:	331449117192602
Site name:	011S004W05L002S		
Latitude:	331449		
Longitude:	1171926	Dec lat:	33.24531262
Dec lon:	-117.32475958	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	59.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1924
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

O59
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128432**

Agency cd:	USGS	Site no:	331448117180201
Site name:	011S004W04J001S		
Latitude:	331448		
Longitude:	1171802	Dec lat:	33.24670155
Dec lon:	-117.30142564	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1958-06-20
Water quality data end date:	1958-06-20	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

O60
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128392**

Agency cd:	USGS	Site no:	331443117180101
Site name:	011S004W04R003S		
Latitude:	331443		
Longitude:	1171801	Dec lat:	33.24531271
Dec lon:	-117.30114787	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	71.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Stream channel		
Site type:	Ground-water other than Spring	Date construction:	1934
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	150	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-20
Water quality data end date:	1958-07-00	Water quality data count:	2
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	64.00	

S61
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS3128513**

Agency cd:	USGS	Site no:	331429117180401
Site name:	011S004W09B001S		
Latitude:	331429		
Longitude:	1171804	Dec lat:	33.24142395
Dec lon:	-117.30198124	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1948
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	154	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-00
Water quality data end date:	1954-08-00	Water quality data count:	1
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	70.00	

S62
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS3128514**

Agency cd:	USGS	Site no:	331429117180402
Site name:	011S004W09B002S		
Latitude:	331429		
Longitude:	1171804	Dec lat:	33.24142395
Dec lon:	-117.30198124	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	71.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1921
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	124	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date:0000-00-00
Water quality data count: 0
Ground water data begin date: 1965-12-01
Ground water data end date: 1965-12-01
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	70.00	

O63
East
1/2 - 1 Mile
Higher

FED USGS USGS3128391

Agency cd: USGS
Site no: 331443117180002
Site name: 011S004W04Z006S
Latitude: 331443
Longitude: 1171800
Dec lat: 33.24531271
Dec lon: -117.30087008
Coor meth: M
Coor accr: U
Latlong datum: NAD27
Dec latlong datum: NAD83
District: 06
State: 06
County: 073
Country: US
Land net: Not Reported
Location map: Not Reported
Map scale: Not Reported
Altitude: 73.00
Altitude method: L
Altitude accuracy: 10
Altitude datum: NGVD29
Hydrologic: San Luis ReyEscondido. California. Area = 766 sq.mi.
Topographic: Flat surface
Site type: Ground-water other than Spring
Date construction: 1912
Date inventoried: Not Reported
Mean greenwich time offset: PST
Local standard time flag: Y
Type of ground water site: Single well, other than collector or Ranney type
Aquifer Type: Not Reported
Aquifer: Not Reported
Well depth: Not Reported
Hole depth: Not Reported
Source of depth data: Not Reported
Project number: Not Reported
Real time data flag: 0
Daily flow data begin date: 0000-00-00
Daily flow data end date: 0000-00-00
Daily flow data count: 0
Peak flow data begin date: 0000-00-00
Peak flow data end date: 0000-00-00
Peak flow data count: 0
Water quality data begin date: 1915-08-00
Water quality data end date:1915-08-00
Water quality data count: 1
Ground water data begin date: 0000-00-00
Ground water data end date: 0000-00-00
Ground water data count: 0

Ground-water levels, Number of Measurements: 0

O64
East
1/2 - 1 Mile
Higher

FED USGS USGS3128390

Agency cd:	USGS	Site no:	331443117180001
Site name:	011S004W04K002S		
Latitude:	331443		
Longitude:	1171800	Dec lat:	33.24531271
Dec lon:	-117.30087008	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

P65
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS3128617**

Agency cd:	USGS	Site no:	331408117190001
Site name:	011S004W08H003S		
Latitude:	331408		
Longitude:	1171900	Dec lat:	33.23558076
Dec lon:	-117.31753722	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	90.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

T66
ENE
1/2 - 1 Mile
Higher

FED USGS USGS3128262

Agency cd:	USGS	Site no:	331455117180101
Site name:	011S004W04G001S		
Latitude:	331455		
Longitude:	1171801	Dec lat:	33.24864603
Dec lon:	-117.30114795	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	78.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

T67
ENE
1/2 - 1 Mile
Higher

FED USGS USGS3128263

Agency cd:	USGS	Site no:	331455117180102
Site name:	011S004W04G003S		
Latitude:	331455		
Longitude:	1171801	Dec lat:	33.24864593
Dec lon:	-117.30114785	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	73.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Stream channe		
Site type:	Ground-water other than Spring	Date construction:	1924
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Q68
SE
1/2 - 1 Mile
Higher

FED USGS **USGS3128656**

Agency cd:	USGS	Site no:	331415117181301
Site name:	011S004W09G004S		
Latitude:	331415		
Longitude:	1171813	Dec lat:	33.23753519
Dec lon:	-117.30448132	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	73.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	69.00	

U69
SE
1/2 - 1 Mile
Higher

FED USGS USGS3128454

Agency cd:	USGS	Site no:	331416117180903
Site name:	011S004W09G003S		
Latitude:	331416		
Longitude:	1171809	Dec lat:	33.23781296
Dec lon:	-117.30337018	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	109	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	70.00	

U70
SE
1/2 - 1 Mile
Higher

FED USGS USGS3128452

Agency cd:	USGS	Site no:	331416117180901
Site name:	011S004W09G001S		
Latitude:	331416		
Longitude:	1171809	Dec lat:	33.23781296
Dec lon:	-117.30337018	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	124	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1958-06-27	Water quality data count:	1
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	69.00	

U71
SE
1/2 - 1 Mile
Higher

FED USGS USGS3128453

Agency cd:	USGS	Site no:	331416117180902
Site name:	011S004W09G002S		
Latitude:	331416		
Longitude:	1171809	Dec lat:	33.23781296
Dec lon:	-117.30337018	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	140	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1958-10-28
Water quality data end date:	1961-03-25	Water quality data count:	2
Ground water data begin date:	1966-12-01	Ground water data end date:	1966-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-12-01	68.00	

U72
SE
1/2 - 1 Mile
Higher

FED USGS USGS3128465

Agency cd:	USGS	Site no:	331418117180301
Site name:	011S004W03S003S		
Latitude:	331418		
Longitude:	1171806	Dec lat:	33.2383685
Dec lon:	-117.30253682	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	73.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1921
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	90.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

73
North
1/2 - 1 Mile
Lower

FED USGS USGS3128209

Agency cd:	USGS	Site no:	331524117184801
Site name:	010S004W32R001S		
Latitude:	331524		
Longitude:	1171848	Dec lat:	33.25670116
Dec lon:	-117.31420375	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	55.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	76.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1972-04-27
Ground water data count:	3		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1972-04-27	7.20		1966-02-16	8.80	
1966-02-01	9.00				

V74
SSE
1/2 - 1 Mile
Higher

FED USGS **USGS3128599**

Agency cd:	USGS	Site no:	331403117183101
Site name:	011S004W09L002S		
Latitude:	331403		
Longitude:	1171831	Dec lat:	33.23420195
Dec lon:	-117.30948146	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1943
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

75
SE
1/2 - 1 Mile
Higher

FED USGS **USGS3128464**

Agency cd:	USGS	Site no:	331418117180401
Site name:	011S004W09Z009S		
Latitude:	331418		
Longitude:	1171804	Dec lat:	33.2383685
Dec lon:	-117.30198125	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

W76
SW
1/2 - 1 Mile
Lower

FED USGS **USGS3128637**

Agency cd:	USGS	Site no:	331410117191501
Site name:	011S004W08Z008S		
Latitude:	331410		
Longitude:	1171915	Dec lat:	33.23614628
Dec lon:	-117.32170399	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	68.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

X77
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS3128600**

Agency cd:	USGS	Site no:	331403117190001
Site name:	011S004W08J002S		
Latitude:	331403		
Longitude:	1171900	Dec lat:	33.23420192
Dec lon:	-117.31753722	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	92.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	1951
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	119	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1953-06-12
Water quality data end date:	1962-04-10	Water quality data count:	18
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

V78
SSE
1/2 - 1 Mile
Higher

FED USGS USGS3128598

Agency cd:	USGS	Site no:	331403117182801
Site name:	011S004W09L001S		
Latitude:	331403		
Longitude:	1171828	Dec lat:	33.23420196
Dec lon:	-117.3086481	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	70.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1934
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	78.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1963-11-18
Water quality data end date:	1963-11-18	Water quality data count:	1
Ground water data begin date:	1965-12-01	Ground water data end date:	1965-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-12-01	66.00	

79
East
1/2 - 1 Mile
Higher

FED USGS USGS3128442

Agency cd:	USGS	Site no:	331450117175401
Site name:	011S004W04J002S		
Latitude:	331450		
Longitude:	1171754	Dec lat:	33.24725709
Dec lon:	-117.29920336	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	73.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1955
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	145	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1965-10-21	Water quality data count:	7
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	64.00	

Y80
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128389**

Agency cd:	USGS	Site no:	331443117175301
Site name:	011S004W04R002S		
Latitude:	331443		
Longitude:	1171753	Dec lat:	33.24531272
Dec lon:	-117.29892559	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	72.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Stream channel		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	142	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	69.00	

Y81
East
1/2 - 1 Mile
Higher

FED USGS **USGS3128380**

Agency cd:	USGS	Site no:	331442117175301
Site name:	011S004W04R001S		
Latitude:	331442		
Longitude:	1171753	Dec lat:	33.24503485
Dec lon:	-117.29892559	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	75.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1952
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	180	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-00
Water quality data end date:	1958-10-28	Water quality data count:	3
Ground water data begin date:	1966-02-01	Ground water data end date:	1966-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-02-01	71.00	

W82
SW
1/2 - 1 Mile
Lower

FED USGS USGS3128585

Agency cd:	USGS	Site no:	331408117191401
Site name:	011S004W08Z007S		
Latitude:	331408		
Longitude:	1171914	Dec lat:	33.23559075
Dec lon:	-117.32142621	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	60.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	1939
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

83
WSW
1/2 - 1 Mile
Lower

FED USGS USGS3128518

Agency cd:	USGS	Site no:	331430117193301
Site name:	011S004W05N001S		
Latitude:	331430		
Longitude:	1171933	Dec lat:	33.24170163
Dec lon:	-117.32670409	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	52.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1940
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Z84
ENE
1/2 - 1 Mile
Higher

FED USGS USGS3128303

Agency cd:	USGS	Site no:	331504117175901
Site name:	011S004W04Z008S		
Latitude:	331504		
Longitude:	1171759	Dec lat:	33.25114564
Dec lon:	-117.30059228	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	80.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

85
WSW
1/2 - 1 Mile
Lower

FED USGS USGS3128480

Agency cd:	USGS	Site no:	331422117193201
Site name:	011S004W08C004S		
Latitude:	331422		
Longitude:	1171932	Dec lat:	33.23947948
Dec lon:	-117.32642632	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	54.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	135	Hole depth:	Not Reported
Source of depth data.	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	46.00	

Z66
ENE
1/2 - 1 Mile
Higher

FED USGS USGS3128313

Agency cd:	USGS	Site no:	331505117175601
Site name:	011S004W04Z009S		
Latitude:	331505		
Longitude:	1171756	Dec lat:	33.25142361
Dec lon:	-117.29975892	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	81.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID
Direction
Distance
Elevation

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
X87 **SSW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS3128581**

Agency cd:	USGS	Site no:	331359117190102
Site name:	011S004W08Z009S		
Latitude:	331359		
Longitude:	1171901	Dec lat:	33.23309065
Dec lon:	-117.31781501	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	95.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1928
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
X88 **SSW** **1/2 - 1 Mile** **Higher**	FED USGS	**USGS3128580**

Agency cd:	USGS	Site no:	331359117190101
Site name:	011S004W08J004S		
Latitude:	331359		
Longitude:	1171901	Dec lat:	33.23309095
Dec lon:	-117.31781501	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	95.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido, California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1948
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	91.00	

89
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS3128458**

Agency cd:	USGS	Site no:	331416117193401
Site name:	011S004W08C003S		
Latitude:	331416		
Longitude:	1171934	Dec lat:	33.23781287
Dec lon:	-117.32698169	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	54.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1949
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	228	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1958-06-27
Water quality data end date:	1961-09-27	Water quality data count:	3
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	44.00	

Map ID Direction Distance Elevation	Database	EDR ID Number
90 **SW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS3128601**

Agency cd:	USGS	Site no:	331403117192101
Site name:	011S004W08L005S		
Latitude:	331403		
Longitude:	1171921	Dec lat:	33.2342010
Dec lon:	-117.32337071	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	80.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 786 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	1955
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	85.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1966-01-01	Ground water data end date:	1966-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-01-01	60.00	

Map ID Direction Distance Elevation	Database	EDR ID Number
AA91 **SSW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS3128568**

Agency cd:	USGS	Site no:	331357117191002
Site name:	011S004W08K002S		
Latitude:	331357		
Longitude:	1171910	Dec lat:	33.2325353
Dec lon:	-117.32031508	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

Altitude:	95.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	1922
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

AA92
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS3128567**

Agency cd:	USGS	Site no:	331357117191001
Site name:	011S004W08K001S		
Latitude:	331357		
Longitude:	1171910	Dec lat:	33.2325353
Dec lon:	-117.32031508	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	95.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	400	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-08-00
Water quality data end date:	1972-09-13	Water quality data count:	14
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
AB93 **SSE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS3128556**

Agency cd:	USGS	Site no:	331355117182302
Site name:	011S004W09Z004S		
Latitude:	331355		
Longitude:	1171823	Dec lat:	33.23197982
Dec lon:	-117.30725919	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 768 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1925
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

AB94 **SSE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS3128555**

Agency cd:	USGS	Site no:	331355117182301
Site name:	011S004W09Z003S		
Latitude:	331355		
Longitude:	1171823	Dec lat:	33.23197982
Dec lon:	-117.30725919	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	69.00	Altitude method:	L
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 768 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

95
SE
1/2 - 1 Mile
Higher

FED USGS **USGS3128626**

Agency cd:	USGS	Site no:	331409117175801
Site name:	011S004W09H001S		
Latitude:	331409		
Longitude:	1171758	Dec lat:	33.23588686
Dec lon:	-117.30031455	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	103.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido California. Area = 766 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	1946
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	60.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1957-10-22
Water quality data end date:	1957-10-22	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
92057	3	0	0.00

Federal EPA Radon Zone for SAN DIEGO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN DIEGO COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.677 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.400 pCi/L	100%	0%	0%
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

APPENDIX D
PHASE II ENVIRONMENTAL SITE ASSESSMENT – WESTERN PARCEL

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
4617 North River Road
Oceanside, California

Prepared for:
The Olson Company

August 10, 2005

SECOR Job No. 04OT.29221.92

SECOR
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August 10, 2005

Ms. Kimberly Duran
The Olson Company
9171 Towne Centre Dr, Suite 450
San Diego, California 92122

RE: PHASE II ENVIRONMENTAL SITE ASSESSMENT
4617 North River Road
Oceanside, California
SECOR Job No. 04OT.29221.92

Dear Ms. Duran:

At the request and authorization of The Olson Company, SECOR International Incorporated (SECOR) is pleased to present this report detailing the findings of the Phase II Environmental Site Assessment (ESA) of the property located at 4617 North River Road, Oceanside, California (referred to herein as the Site). This work was conducted in general accordance with SECOR's proposal dated June 9, 2005 and the terms contained in the Master Consulting Services Agreement with the Olson Company dated November 28, 2001. The findings of the Phase II ESA are contained in the attached document. In addition, SECOR has provided below, a brief summary of the findings of the completed assessment.

EXECUTIVE SUMMARY

At the request and authorization of the Olson Company, SECOR conducted a Phase II Environmental Site Assessment (ESA) of the subject property located at 4617 North River Road, Oceanside, California. The Phase II ESA was conducted based on the results of SECOR's Phase I ESA dated June 8, 2005, which recommended that the following issues be addressed prior to Site development:

- No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. George Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or exact location of these tanks. SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if and the scope of any subsurface assessment is necessary to evaluate potential contamination to Site soils.

- Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

    - Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommended further investigation of the soils beneath this AST in order to assess the extent of petroleum hydrocarbon contamination.

    - Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommended the removal of this AST prior to Site development.

    - Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs and is supplied by two adjacent water wells. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR recommended that the water AST be removed prior to Site development.

- According to Mr. Nagata, two operational water wells are located on the Site adjacent to the irrigation water AST discussed above. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portion of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. SECOR recommended that all observed onsite water wells be properly abandoned prior to Site development. SECOR further recommended that a surveyor attempt to locate the remaining wells using the coordinates provided and that any wells discovered by this process or during Site grading activities be properly abandoned.

- Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent an environmental concern. SECOR recommends that during site grading that any suspect transite pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal and, therefore, not considered a significant potential cost on this project dependant on quantity. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal. Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommended that these features be avoided during Site development.

- Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommended sampling the soils in the vicinity of the pallets in order to assess the potential contamination (metals) which may have occurred due to these batteries.

- A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommended sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs), pesticides, and metals in order to verify that no contaminants were present above levels which would require remediation or removal from the Site.

- Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommended sampling the site soils for residual pesticides.

SECOR conducted a Phase II subsurface investigation of the Site on June 27, 2005. SECOR's investigation of the property consisted of a total of seven GeoProbe borings and ten hand-auger borings to address several issues identified on the Site. The laboratory test results are discussed below. A summary of the laboratory test results are attached as Tables 1 through 4.

SOIL-VAPOR SAMPLES
Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil-vapor borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As presented in the attached Table 2, chemical analysis of all soil-vapor samples (V-1, V-2, and V-3) reported concentrations of TPH-g and VOCs below their respective laboratory detection limits.

SOIL SAMPLES

Diesel AST:
Several soil samples from Borings B-1 and B-2 were found to contain petroleum hydrocarbon contamination to the maximum explored depth of 15 feet bgs. As presented in the attached Table 1, the sample from boring B-1 at 2 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 450 and 150 milligrams per kilogram (mg/kg), respectively. The sample from boring B-1 at 15 feet bgs exhibited diesel range petroleum hydrocarbons at 45 mg/kg. The sample from boring B-2 at 5 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 220 and 39 milligrams per kilogram (mg/kg), respectively. The sample from boring B-2 at 10 feet bgs exhibited gasoline, diesel, and oil range petroleum hydrocarbons at 0.62, 3,100, and 350 mg/kg, respectively – the peak concentrations of all samples obtained from these two borings. The sample from boring B-2 at 15 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 240 mg/kg. The 15 feet bgs samples from boring B-1 and B-2 were not

analyzed for gasoline or oil range petroleum hydrocarbons due to the relatively low levels found in shallower samples.

Given depth to groundwater beneath the Site is estimated to be approximately 60 feet bgs, the observed contaminant concentrations were compared to the California Regional Water Quality Control Board (CRWQCB) Soil Screening Levels for soils located between 20 and 150 feet above groundwater. According to the CRWQCB, the Soil Screening Levels for gasoline, diesel, and motor oil range petroleum hydrocarbons are 500, 1,000, and 10,000 mg/kg, respectively. Based on these screening levels, it appears that soils at 15 feet bgs in the vicinity of the diesel AST contained these contaminants at concentrations below Soil Screening Levels. SECOR recommends that soils found shallower than 15 feet bgs be excavated, characterized, and properly disposed, if necessary. Based on the data collected to date, SECOR would estimate an excavation of approximately 125 cubic yards of soil (15'x15'x15'). SECOR would estimate the removal cost to be on the order of $15,000 to $20,000.

Former USTs:
Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As summarized in the attached Table 1, chemical analysis of all soil samples from borings B-3, B-4, and B-5 reported concentrations of gasoline, diesel, and motor oil range petroleum hydrocarbons as well as VOCs below their respective laboratory detection limits.

Based on this data and assuming that the approximate location and status of these USTs were accurately depicted by George Nagata, SECOR considers the most probable case to be that the USTs have been removed and there is no significant soil contamination found during Site development. In this case there would not be any cost associated with these USTs. However, for a worst case scenario estimate, it must be assumed that the USTs are still located on the Site. The worst case cost associated with removal of the tanks and potential soil contamination (assumed to be approximately at 400 cubic yards) is estimated at $60,000 to $90,000 (if contaminated soils are not encountered, the UST removal cost is estimated to be $25,000).

Batteries:
SECOR advanced two (2) shallow borings adjacent to the pallets of used batteries observed on the Site. As summarized in the attached Table 3, chemical analysis of all soil samples from borings HA-6 and HA-7 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-6@1' and HA-7@1' at concentrations of 3.4 and 1.7 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg). Based on this data, SECOR considers the batteries unlikely to have environmentally impacted the Site and no further investigation is recommended. SECOR does recommend that the batteries be removed from the property.

Fill Dirt:
SECOR advanced two shallow borings (HA-8 and HA-9) into the large mound of fill dirt observed south of the packing house on the Site. Soil samples were collected at a depth of approximately one foot bgs and submitted to a state certified laboratory for TPH carbon-chain (C6-C40), VOCs, pesticides, and CAM metals analysis. As summarized in the attached

Table 1, the samples contained non-detectable levels of gasoline, diesel, and motor oil range petroleum hydrocarbons and VOCs. As summarized in the attached Table 3, chemical analysis of the soil samples from borings HA-8 and HA-9 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-8@1' and HA-9@1' at concentrations of 2.0 and 1.9 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg). As presented in the attached Table 4, chemical analysis of these samples also indicated the presence of several pesticides at levels below their respective US EPA PRGs. Based on this data, SECOR considers the fill dirt unlikely to have environmentally impacted the Site and no further investigation is recommended.

Pesticides:
SECOR advanced five shallow borings (HA-1 through HA-5) evenly spaced throughout the Site in order to sample the Site soils for pesticides. Soil samples were collected at depths of approximately one and three feet bgs. As presented in the attached Table 4, various pesticides were detected in all one foot samples at levels which exceeded their respective US EPA PRG. SECOR subsequently analyzed the three feet bgs samples from borings HA-1 through HA-5. All of these three feet bgs samples reported pesticides at concentrations which are below their respective US EPA PRGs or state hazardous waste levels. Therefore, it appears that the top three feet of soils throughout the agricultural field portions of the Site will need to be addressed by corrective grading. However, given the geotechnical recommendation to recompact Site soils to an average depth of 8 to 10 feet during grading, it is anticipated that incidental mixing inherent in the grading will generate average concentrations after grading below residential PRGs and hazardous waste levels and therefore should address the residual pesticides adequately. SECOR recommends that a grading plan be developed to direct the grading contractor on appropriate means to complete the corrective grading. Based on this plan a cost to grade the Site can then be developed.

It has been a pleasure to provide environmental consulting services for you on this project and we look forward to working with you in the future. Should there be any questions regarding the information provided within the accompanying report, please do not hesitate to contact the undersigned at (909) 335-6116.

Respectfully submitted,
SECOR International Incorporated

Justin R. Hone
Project Geologist

Kyle D. Emerson, CEG 1271
Senior Vice President

cc: Mr. Preston W. Brooks
Cox Castle, Nicholson LLP
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Los Angeles, California 90067

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APPENDICES

1.0 INTRODUCTION

This report documents the methodology and findings of a Phase II environmental site assessment (ESA) completed by SECOR International Incorporated (SECOR) at the property located at 4617 North River Road, Oceanside, California. The Phase II ESA was conducted to address the recognized environmental conditions (RECs) identified within SECOR's Phase I ESA investigation dated June 8, 2005.

Based on the recommendations contained in the above referenced Phase I ESA, SECOR developed a scope of work to address the RECs (subsurface soil impacts) at the above referenced property. The investigation was conducted in accordance with the scope of work and terms provided in The Olson Company's Master Consulting Services Agreement dated November 28, 2001. The scope of work completed and the results of that investigation are provided below.

1.1 SITE DESCRIPTION AND OPERATIONS

The Site consists of one rectangular parcel of land comprising approximately 17 acres of land addressed as 4617 North River Road, Oceanside, California. The Site is located in a commercial and residential area of Oceanside, California (see Figure 1). The west side of the Site is bounded by a single-family residential neighborhood; the north side of the Site is bounded by North River Road followed by a single-family residential neighborhood. To the east of the Site is an access road followed by an automobile auction yard, and to the south is the San Luis Rey River.

The Site is currently developed with three residential structures, two commercial structures including a warehouse and a packing house, a dispatch office, and several small storage sheds. The majority of the Site, which is not occupied by these structures, is tilled for agricultural use. A dirt road bisects the Site from North River Road and leads to a perimeter dirt road which encircles the agricultural fields in the southern half of the Site. The Site is currently occupied by Nagata Brothers Farms who uses portions of the property for strawberry farming (Figure 2).

1.2 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located in the City of Oceanside, California. A review of the USGS 7.5 minute topographic map of the San Luis Rey Quadrangle shows the site located at an elevation of approximately 70 feet above mean sea level (MSL; Figure 1), with a southwesterly gradient.

The subject property lies within the Peninsular Range Geomorphic Province (CDMG, 1969). The Peninsular Range Geomorphic Province is characterized by northwest trending ranges and valleys resulting from sub-parallel transform faults accommodating the Pacific-North American plate contact motions.

The site is underlain by Pleistocene marine and non-marine terrace deposits. The surface deposits in the vicinity of the Site are further described as well-indurated sandstone and conglomerate terrace deposits (CDMG, 1965). No active faults were identified within one mile of the Site (USGS, 2004). The nearest active fault identified is the Newport-Inglewood-Rose Canyon Fault located approximately five miles west of the site.

The Site is located within the San Diego Region (9) of the California Regional Water Quality Control Board (CRWQCB). Groundwater is expected to flow southwest towards the Pacific Ocean. The Site is mapped as being in a 500-year flood zone related to the nearby San Luis Rey River.

2.0 BACKGROUND INFORMATION

This Phase II ESA was conducted, based on the results of SECOR's Phase I ESA, which identified the following recognized environmental conditions as warranting further investigation:

- No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. George Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or exact location of these tanks. SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if and the scope of any subsurface assessment is necessary to evaluate potential contamination to Site soils.

- Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

    - Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommends further investigation of the soils beneath this AST in order to assess the extent of petroleum hydrocarbon contamination.

    - Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommends the removal of this AST prior to Site development.

    - Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs and is supplied by two adjacent water wells. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR does recommend that the water AST be removed prior to Site development.

- According to Mr. Nagata, two operational water wells are located on the Site adjacent to the irrigation water AST discussed above. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portion of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. SECOR recommends that all observed onsite water wells be properly abandoned prior to Site development. SECOR would further recommend that a surveyor attempt to locate the remaining wells using the coordinates provided and that any wells discovered by this process or during Site grading activities be properly abandoned.

- Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent an environmental concern. SECOR recommends that during site grading that any suspect transite pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal and, therefore, not considered a significant potential cost on this project dependant on quantity. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal. Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommends that these features be avoided during Site development.

- Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommends sampling the soils in the vicinity of the pallets in order to assess the potential contamination (metals) which may have occurred due to these batteries.

- A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommends sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs); pesticides, and metals in order to verify that no contaminants are present above levels which would require remediation or removal from the Site.

- Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommends sampling the site soils for residual pesticides.

The results of the Phase II investigation are reported herein.

3.0 FIELD INVESTIGATION PROGRAM

3.1 SCOPE OF WORK

File Review:

SECOR personnel requested information for the onsite historical USTs from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR proposes to review these files and adjust the scope of work accordingly. Based on the information in the files it can be determined if and the scope of any necessary subsurface assessment to evaluate potential contamination to Site soils. For the purposes of this proposal, it is assumed that assessment will be necessary for all three tanks and that this assessment will consist of one boring placed on the downgradient side of each former UST location.

Field Investigation:

SECOR completed a total of twelve borings, discussed as follows:

- SECOR advanced a total of two (2) borings beneath surface staining observed beneath the diesel AST on the Site in order to sample the soils for petroleum hydrocarbons. Soil samples were collected using a hand auger at depths of 2 and 5 feet below ground surface (bgs). After clearing 5 feet bgs, samples were collected with a Geoprobe direct-push drill rig at depths of 10 and 15 feet. A photo-ionization detector (PID) was used to evaluate the samples in the field. The two samples from each boring exhibiting the higher PID readings in parts per million (ppm) or petroleum hydrocarbon odors were submitted to a state certified laboratory for total petroleum hydrocarbons (TPH) carbon-chain (C6-C40) analysis.

- Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). Soil samples were collected using a hand auger at depths of 2 and 5 feet below ground surface (bgs). After clearing 5 feet bgs, samples were collected with a Geoprobe direct-push drill rig at depths of 10 and 15 feet. A photo-ionization detector (PID) was used to evaluate the samples in the field. The samples from each boring exhibiting the higher PID readings in parts per million (ppm) or petroleum hydrocarbon odors were submitted to a state certified laboratory for total petroleum hydrocarbons (TPH) carbon-chain (C6-C40) and VOCs analysis. SECOR also collected three soil-vapor samples from the general vicinity of the former USTs at a depth of 10 feet bgs.

- SECOR advanced two (2) shallow borings adjacent to the pallets of used batteries observed on the Site. Soil samples were collected at depths of approximately one and three feet bgs and submitted to a state certified laboratory for CAM Metals analysis.

- SECOR advanced two (2) shallow samples from the large mound of fill dirt observed south of the packing house on the Site. Soil samples were collected at a depth of approximately one foot bgs and submitted to a state certified laboratory for TPH carbon-chain (C6-C40), VOC's, pesticides, and CAM metals analysis.

- SECOR advanced five (5) shallow borings evenly spaced throughout the Site in order to sample the Site soils for pesticides. Soil samples were collected at depths of approximately one and three feet bgs. The one foot bgs sample was submitted to a state certified laboratory for pesticide analysis. The three foot bgs samples were held by the laboratory and may be analyzed if the one foot bgs samples exhibit elevated levels of pesticides.

3.2 SOIL-GAS SAMPLING PROCEDURES

The soil-gas sampling methods and procedures were performed in general accordance with SECOR's proposal dated June 9, 2005.

Soil gas samples were collected at approximately 10 feet below ground surface (bgs), by advancing a steel rod with an expendable drive point tip to the desired depth using a GeoProbe 5400 drill rig with a 1.5-inch diameter push rod. Once the desired depth was reached, the drive point was dislodged and ¼ inch diameter poly-tubing was secured to the bottom of the steel rod. Next, the poly-tubing was connected to a vacuum pump. The vacuum pump was then connected to an empty Tedlar bag and soil gases were drawn from the soil into the Tedlar bag. The collected samples were then sealed tightly and labeled with appropriate identification information (boring number, sample depth, sample collection date, sample collection time and job number). The samples were then logged on a chain-of-custody form and placed in a box for transport to the laboratory. Copies of the chain-of-custody forms are included as Appendix A.

3.3 SOIL SAMPLING PROCEDURES

The soil sampling methods and procedures were performed in general accordance with SECOR's proposal dated June 9, 2005.

HAND AUGER SOIL SAMPLING PROCEDURES

All boring locations were hand-augered to a depth of five feet bgs. Soil samples were collected for all samples shallower than 5 feet bgs. A photo-ionization detector (PID) was used to monitor the soils collected for volatile organic compound (VOC) vapors of these samples. Soil was removed from the auger and placed in a zip-lock type baggie and the PID probe was inserted into the baggie to monitor the headspace for VOC vapors. All hand-auger soil samples were carefully packaged for chemical analysis in glass jars and labeled with appropriate identification information (boring number, sample depth, sample collection date, sample collection time and job number). The samples were then logged on a chain-of-custody form and placed in a chilled cooler for transport to the laboratory. Copies of the chain-of-custody forms are included in Appendix A.

DIRECT PUSH SOIL SAMPLING PROCEDURES

At a depth of five feet bgs, the borings were advanced using a GeoProbe™, truck-mounted drilling rig, and were completed by driving 2-inch outer-diameter hollow steel rods into the underlying soils using a hydraulic ram mounted on the drilling rig. During advancement at each location, sampling of encountered subsurface soils was performed starting at a depth of five feet bgs using a 48-inch long by 2-inch inner diameter plastic sampler. At each sampling interval, the sampler was driven into undisturbed soil using a hydraulic ram on the GeoProbe™ rig until 48 inches of penetration was achieved. Upon advancement of the sampler to the full 48-inch length, the steel rods were extracted from the boring and the sampler sleeve was removed. The drilling and sampling sequence was then repeated at various intervals for the entire depth of each boring.

Upon extracting the sampler at each depth interval, the soils contained therein were visually examined by SECOR field personnel who then classified the soils. A summary of the soil classifications obtained are presented in the boring logs included as Appendix B.

After soil classification, the soil samples were collected from the sampling tube. A photo-ionization detector (PID) was used to monitor the soils collected for volatile organic compound (VOC) vapors of these samples. Soil was removed from the auger and placed in a zip-lock type baggie and the PID probe was inserted into the baggie to monitor the headspace for VOC vapors. All soil samples were carefully packaged for chemical analysis in sampler sleeves and labeled with appropriate identification information (boring number, sample depth, sample collection date, sample collection time and job number). The samples were then logged on a chain-of-custody form and placed in a chilled cooler for transport to the laboratory. Copies of the chain-of-custody forms are included in Appendix A.

3.4 BORING ABANDONMENT PROCEDURES

Following the completion of drilling and sampling, the borings were abandoned by removing the sampling equipment from the borehole and subsequently backfilling with hydrated granular bentonite. The tops of borings were capped with soil or black-dyed concrete to match existing surface conditions.

3.5 DECONTAMINATION PROCEDURES

To maintain quality control during soil sampling, prior to each sampling interval, the sampling equipment was decontaminated in an Alconox scrub solution and double-rinsed, first with tap water followed by a final rinse using distilled water. In addition, prior to, and between each boring advanced, the hollow steel rods were cleaned following the same protocol.

4.0 LABORATORY TESTING PROGRAM

All soil and soil-gas samples obtained from the subsurface investigation were delivered under chain-of-custody (Appendix A) to Centrum Analytical Laboratories, Inc. (Centrum) located in Riverside, California. Centrum is certified to perform hazardous waste testing by the State of California Department of Health Services, Environmental Laboratory Accreditation Program.

Soil-vapor samples were submitted to the laboratory for TPH-g and VOC analysis by EPA Test Methods 8015M and 8260B, respectively. The soil samples were analyzed for TPH carbon-chain, VOCs, Metals, and Pesticides by EPA Test Methods 8015M, 8260B, 6010/7000, and 8081, respectively. Analytical laboratory test results are attached as Appendix A and summarized in Tables 1, 2, and 3.

5.0 INVESTIGATION FINDINGS

5.1 FIELD OBSERVATIONS

The lithology encountered during drilling consisted of predominantly silty sands and well-graded sands, to the maximum explored depth of approximately 15 feet bgs. Groundwater was not encountered to this depth.

Volatile organic vapors were detected in soil samples at concentrations up to 11.6 parts per million by volume (ppm/V) using a MiniRae photoionization detector (PID) calibrated to isobutylene. Hydrocarbon odors were noted in boring B-2 at 10 feet bgs during drilling operations. The PID readings are included on the above-referenced boring logs (Appendix B).

5.2 ANALYTICAL RESULTS

The laboratory test results are discussed below. A summary of the laboratory test results are attached as Tables 1 through 4. The complete laboratory analytical test results are presented on the laboratory data sheets attached as Appendix A. Boring locations are presented on the attached Site Plan, Figure 2.

SOIL-VAPOR SAMPLES

Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil-vapor borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As presented in the attached Table 2, chemical analysis of all soil-vapor samples (V-1, V-2, and V-3) reported concentrations of TPH-g and VOCs below their respective laboratory detection limits.

SOIL SAMPLES

Diesel AST:

Several soil samples from Borings B-1 and B-2 were found to contain petroleum hydrocarbon contamination to the maximum explored depth of 15 feet bgs. As presented in the attached Table 1, the sample from boring B-1 at 2 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 450 and 150 milligrams per kilogram (mg/kg), respectively. The sample from boring B-1 at 15 feet bgs exhibited diesel range petroleum hydrocarbons at 45 mg/kg. The sample from boring B-2 at 5 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 220 and 39 milligrams per kilogram (mg/kg), respectively. The sample from boring B-2 at 10 feet bgs exhibited gasoline, diesel, and oil range petroleum hydrocarbons at 0.62, 3,100, and 350 mg/kg, respectively – the peak concentrations of all samples obtained from these two borings. The sample from boring B-2 at 15 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 240 mg/kg. The 15 feet bgs samples from boring B-1 and B-2 were not analyzed for gasoline or oil range petroleum hydrocarbons due to the relatively low levels found in shallower samples.

Given depth to groundwater beneath the Site is estimated to be approximately 60 feet bgs, the observed contaminant concentrations were compared to the California Regional Water Quality Control Board (CRWQCB) Soil Screening Levels for soils located between 20 and 150 feet above groundwater. According to the CRWQCB, the Soil Screening Levels for gasoline, diesel, and motor oil range petroleum hydrocarbons are 500, 1,000, and 10,000 mg/kg, respectively. Based on these screening levels, it appears that soils at 15 feet bgs in the vicinity of the diesel AST contained these contaminants at concentrations below Soil Screening Levels.

__Former USTs:__
Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As summarized in the attached Table 1, chemical analysis of all soil samples from borings B-3, B-4, and B-5 reported concentrations of gasoline, diesel, and motor oil range petroleum hydrocarbons as well as VOCs below their respective laboratory detection limits.

__Batteries:__
SECOR advanced two (2) shallow borings adjacent to the pallets of used batteries observed on the Site. As summarized in the attached Table 3, chemical analysis of all soil samples from borings HA-6 and HA-7 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-6@1' and HA-7@1' at concentrations of 3.4 and 1.7 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg).

__Fill Dirt:__
SECOR advanced two shallow borings (HA-8 and HA-9) into the large mound of fill dirt observed south of the packing house on the Site. Soil samples were collected at a depth of approximately one foot bgs and submitted to a state certified laboratory for TPH carbon-chain (C6-C40), VOCs, pesticides, and CAM metals analysis. As summarized in the attached Table 1, the samples contained non-detectable levels of gasoline, diesel, and motor oil range petroleum hydrocarbons and VOCs. As summarized in the attached Table 3, chemical analysis of the soil samples from borings HA-8 and HA-9 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-8@1' and HA-9@1' at concentrations of 2.0 and 1.9 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg). As presented in the attached Table 4, chemical analysis of these samples also indicated the presence of several pesticides at levels below their respective US EPA PRGs.

__Pesticides:__
SECOR advanced five shallow borings (HA-1 through HA-5) evenly spaced throughout the Site in order to sample the Site soils for pesticides. Soil samples were collected at depths of approximately one and three feet bgs. As presented in the attached Table 4, various pesticides were detected in all one foot samples at levels which exceeded their respective US EPA PRG. SECOR subsequently analyzed the three feet bgs samples from borings HA-1 through HA-5. All of these three feet bgs samples reported pesticides at concentrations which are below their respective US EPA PRGs.

6.0 CONCLUSIONS AND RECOMMENDATIONS

At the request and authorization of the Olson Company, SECOR conducted a Phase II Environmental Site Assessment (ESA) of the subject property located at 4617 North River Road, Oceanside, California. The Phase II ESA was conducted based on the results of SECOR's Phase I ESA dated June 8, 2005, which recommended that the following issues be addressed prior to Site development:

- No underground storage tanks (USTs) were visually identified at the Site during SECOR's site reconnaissance. However, review of a regulatory agency database search for the property and surrounding area performed by Environmental Data Resources (EDR) indicated the historical presence of USTs at the Site. The Site is listed under the HIST UST database as having had a total of three USTs – one 1,000-gallon diesel, one 1,000-gallon gasoline, and one 550-gallon gasoline. The diesel tank and the 1,000-gallon gasoline tank are reported to have been installed in 1978. The installation year for the 550-gallon gasoline tank is not reported. No leaks are reported or associated with these USTs. Mr. George Nagata (Site owner) indicated that all of the USTs were removed in the 1980's. Mr. Nagata also indicated that all three tanks had been located in the open area between the warehouse and packing house structures in the approximate location of the existing diesel AST. Mr. Nagata stated that he had no information regarding the removal or exact location of these tanks. SECOR personnel requested information for the Site address from the County of San Diego Department of Environmental Health (SDDEH). The SDDEH indicated that records were on file for the Site. SECOR recommends that these files be reviewed and a determination be made if any impact was detected during the removal of the USTs. Based on the information in the files it can be determined if and the scope of any subsurface assessment is necessary to evaluate potential contamination to Site soils.

- Three aboveground storage tanks (ASTs) were observed at the Site during SECOR's site reconnaissance, discussed as follows:

    - Diesel AST – This tank had a capacity of approximately 500 gallons and was located between the warehouse and packing house structures on top of exposed dirt and grass. Significant staining was observed on the dirt surface beneath this AST. SECOR recommended further investigation of the soils beneath this AST in order to assess the extent of petroleum hydrocarbon contamination.

    - Propane AST – A 450-gallon AST containing propane was also located on the Site and in close proximity to the diesel AST. The propane was used for forklifts operated on the Site. Given this AST is used to store propane (a gas) SECOR therefore recommends no further investigation. The AST is leased from Ferrellgas. SECOR recommended the removal of this AST prior to Site development.

    - Water AST – An AST of unknown capacity (~1,000 gallons) was used to store irrigation water. This AST was located in the same area as the diesel and propane ASTs and is supplied by two adjacent water wells. Water pumps and PVC piping were connected to this tank. Given that this AST has been used only for storing water, no further investigation is recommended. SECOR recommended that the water AST be removed prior to Site development.

- According to Mr. Nagata, two operational water wells are located on the Site adjacent to the irrigation water AST discussed above. Mr. Nagata also spoke of other water wells which were used in the past, but have since "caved in" or been abandoned. He could not provide location information or approximate dates of use for these wells other than that they were once located in the southern portion of the Site. According to the EDR report, there are 11 water wells which could potentially be located on the Site, installed between the years 1911 and 1952. Latitude and longitude coordinates are listed for each well, but the accuracy of these coordinates to the actual location of the wells is unknown. SECOR recommended that all observed onsite water wells be properly abandoned prior to Site development. SECOR further recommended that a surveyor attempt to locate the remaining wells using the coordinates provided and that any wells discovered by this process or during Site grading activities be properly abandoned.

- Irrigation pumps and piping were located throughout the Site. According to Mr. Nagata, these pipes were replaced with PVC pipes in the 1970's. Given the pre-1978 agricultural activities on the Site, however, some portions of pipe, if not replaced by PVC, could potentially be constructed of transite, a material composed of asbestos and cement. Accordingly, ACMs represent an environmental concern. SECOR recommends that during site grading that any suspect transite pipe be managed as ACM containing until proven not to be. Any ACM containing pipe should be properly disposed of from the site. Given the lack of information on the subsurface piping locations and that assessment of the potential irrigation underground piping is not possible, SECOR does not recommend further investigation at this time. Disposal costs for transit pipe in a non-friable condition are minimal and, therefore, not considered a significant potential cost on this project dependant on quantity. Care should be taken during removal of any potential ACM containing material to avoid disaggregating it into a friable condition, which could increase health and safety concerns and the cost of disposal. Also, two manhole covers labeled "Sewer" were located along the northern boundary of the Site, approximately 20 feet south of North River Road. SECOR recommended that these features be avoided during Site development.

- Several pallets with stacks of used batteries were observed in front of the packing house structure. The batteries appeared to have been degrading and some of the cells were exposed. SECOR recommended sampling the soils in the vicinity of the pallets in order to assess the potential contamination (metals) which may have occurred due to these batteries.

- A large mound of fill dirt was observed south of the packing house. Mr. Nagata informed SECOR personnel that this fill dirt originated from grading the residential development located immediately west of the Site. SECOR recommended sampling this mound of fill dirt for petroleum hydrocarbons, volatile organic compounds (VOCs), pesticides, and metals in order to verify that no contaminants were present above levels which would require remediation or removal from the Site.

- Based on the historical research (aerial photograph review Section 5.1) and current Site operations, it appears that the Site has been used for agricultural purposes. As a result, SECOR recommended sampling the site soils for residual pesticides.

SECOR conducted a Phase II subsurface investigation of the Site on June 27, 2005. SECOR's investigation of the property consisted of a total of seven GeoProbe borings and ten hand-auger borings to address several issues identified on the Site. The laboratory test results are discussed below. A summary of the laboratory test results are attached as Tables 1 through 4.

SOIL-VAPOR SAMPLES

Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil-vapor borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As presented in the attached Table 2, chemical analysis of all soil-vapor samples (V-1, V-2, and V-3) reported concentrations of TPH-g and VOCs below their respective laboratory detection limits.

SOIL SAMPLES

Diesel AST:

Several soil samples from Borings B-1 and B-2 were found to contain petroleum hydrocarbon contamination to the maximum explored depth of 15 feet bgs. As presented in the attached Table 1, the sample from boring B-1 at 2 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 450 and 150 milligrams per kilogram (mg/kg), respectively. The sample from boring B-1 at 15 feet bgs exhibited diesel range petroleum hydrocarbons at 45 mg/kg. The sample from boring B-2 at 5 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 220 and 39 milligrams per kilogram (mg/kg), respectively. The sample from boring B-2 at 10 feet bgs exhibited gasoline, diesel, and oil range petroleum hydrocarbons at 0.62, 3,100, and 350 mg/kg, respectively – the peak concentrations of all samples obtained from these two borings. The sample from boring B-2 at 15 feet bgs exhibited diesel and oil range petroleum hydrocarbons at 240 mg/kg. The 15 feet bgs samples from boring B-1 and B-2 were not analyzed for gasoline or oil range petroleum hydrocarbons due to the relatively low levels found in shallower samples.

Given depth to groundwater beneath the Site is estimated to be approximately 60 feet bgs, the observed contaminant concentrations were compared to the California Regional Water Quality Control Board (CRWQCB) Soil Screening Levels for soils located between 20 and 150 feet above groundwater. According to the CRWQCB, the Soil Screening Levels for gasoline, diesel, and motor oil range petroleum hydrocarbons are 500, 1,000, and 10,000 mg/kg, respectively. Based on these screening levels, it appears that soils at 15 feet bgs in the vicinity of the diesel AST contained these contaminants at concentrations below Soil Screening Levels. SECOR recommends that soils found shallower than 15 feet bgs be excavated, characterized, and properly disposed, if necessary. Based on the data collected to date, SECOR would estimate an excavation of approximately 125 cubic yards of soil (15'x15'x15'). SECOR would estimate the removal cost to be on the order of $15,000 to $20,000.

Former USTs:

Based on the information collected from review of SDDEH files concerning the three former USTs, SECOR was unable to determine the exact location of the former onsite USTs. SECOR advanced a total of three (3) soil borings on the Site in the vicinity of the three former USTs as indicated by George Nagata (Site owner). As summarized in the attached Table 1, chemical analysis of all soil samples from borings B-3, B-4, and B-5 reported concentrations of gasoline, diesel, and motor oil range petroleum hydrocarbons as well as VOCs below their respective laboratory detection limits.

Based on this data and assuming that the approximate location and status of these USTs were accurately depicted by George Nagata, SECOR considers the most probable case to be that the USTs have been removed and there is no significant soil contamination found during Site development. In this case there would not be any cost associated with these USTs. However, for a worst case scenario estimate, it must be assumed that the USTs are still located on the Site. The worst case cost associated with removal of the tanks and potential soil contamination (assumed to be approximately at 400 cubic yards) is estimated at $60,000 to $90,000 (if contaminated soils are not encountered, the UST removal cost is estimated to be $25,000).

Batteries:

SECOR advanced two (2) shallow borings adjacent to the pallets of used batteries observed on the Site. As summarized in the attached Table 3, chemical analysis of all soil samples from borings HA-6 and HA-7 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-6@1' and HA-7@1' at concentrations of 3.4 and 1.7 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg). Based on this data, SECOR considers the batteries unlikely to have environmentally impacted the Site and no further investigation is recommended. SECOR does recommend that the batteries be removed from the property.

Fill Dirt:

SECOR advanced two shallow borings (HA-8 and HA-9) into the large mound of fill dirt observed south of the packing house on the Site. Soil samples were collected at a depth of approximately one foot bgs and submitted to a state certified laboratory for TPH carbon-chain (C6-C40), VOCs, pesticides, and CAM metals analysis. As summarized in the attached Table 1, the samples contained non-detectable levels of gasoline, diesel, and motor oil range petroleum hydrocarbons and VOCs. As summarized in the attached Table 3, chemical analysis of the soil samples from borings HA-8 and HA-9 reported concentrations of analyzed metals other arsenic well below their respective US EPA Preliminary Remediation Goals (PRGs). Arsenic was detected in samples HA-8@1' and HA-9@1' at concentrations of 2.0 and 1.9 mg/kg, respectively. While these concentrations exceed the US EPA PRG for arsenic in residential soils, they are within the typically occurring natural background levels for soils in California (a range of 0.6 to 11 mg/kg). As presented in the attached Table 4, chemical analysis of these samples also indicated the presence of several pesticides at levels below their respective US EPA PRGs. Based on this data, SECOR considers the fill dirt unlikely to have environmentally impacted the Site and no further investigation is recommended.

Pesticides:

SECOR advanced five shallow borings (HA-1 through HA-5) evenly spaced throughout the Site in order to sample the Site soils for pesticides. Soil samples were collected at depths of approximately one and three feet bgs. As presented in the attached Table 4, various pesticides were detected in all one foot samples at levels which exceeded their respective US EPA PRG. SECOR subsequently analyzed the three feet bgs samples from borings HA-1 through HA-5. All of these three feet bgs samples reported pesticides at concentrations which are below their respective US EPA PRGs or state hazardous waste levels. Therefore, it appears that the top three feet of soils throughout the agricultural field portions of the Site will need to be addressed by corrective grading. However, given the geotechnical recommendation to recompact Site soils to an average depth of 8 to 10 feet during grading, it is anticipated that incidental mixing inherent in the grading will generate average concentrations after grading below residential PRGs and hazardous waste levels and therefore should address the residual pesticides adequately. SECOR recommends that a grading plan be developed to direct the grading contractor on appropriate means to complete the corrective grading. Based on this plan a cost to grade the Site can then be developed.

7.0 CLOSURE

SECOR's investigation has been performed with the degree of skill generally exercised by practicing engineers and geologists in the environmental field. SECOR makes no other warranty, either expressed or implied, concerning the conclusions and professional advice that is contained within the body of this report. This assessment has been conducted in accordance with the terms and conditions of SECOR's Master Consulting Agreement with The Olson Company. To the extent any provisions of this report conflict with that agreement, the agreement will control.

Inherent in most projects performed in a heterogeneous subsurface environment, continuing excavation and assessments may reveal findings that are different than those presented herein. This facet of the environmental profession should be considered when formulating professional opinions on the limited data collected on these projects.

This report has been issued with the clear understanding that it is the responsibility of the owner, or their representative, to make appropriate notifications to regulatory agencies. It is specifically not the responsibility of SECOR to conduct appropriate notifications as specified by current County and State regulations.

The information presented in this report is valid as of the date our exploration was performed. Site conditions may degrade with time; consequently, the findings presented herein are subject to change.

8.0 REFERENCES

California Division of Mines and Geology (CDMG), 1962, Geologic Map of California, San Diego and El Centro Sheet, County of San Diego, California, Scale 1:250,000.

CDMG, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.

City of Oceanside Building and Safety Department (760) 435-3065.

City of Oceanside Fire Department (760) 435-4100.

County of San Diego Department of Environmental Health (619) 338-2222.

Department of Oil and Gas (DOG) website, 2004, Regional Wildcat Map W1-7. http://www.consrv.ca.gov/dog/maps/index_map.htm.

Environmental Data Resources, Inquiry number: 1425996.2s.

Southern California Earthquake Data Center (SCEDC) Website, 2004, http://www.data.scec.org

TABLES

Table 1

Summary of Chemical Analysis of Soil Samples Collected from Borings B-1 through B-5, HA-8 and HA-9, EPA Test Methods 8015B, 8260B, and GCMS

Location	Depth (ft)	Date	Petroeum Hydrocarbons (TPH) mg/kg			Volatile Organic Compounds (VOCs) mg/kg																	
			TPH (gasoline range)	TPH (diesel range)	TPH (oil range)	Benzene	n-Butylbenzene	sec-Butylbenzene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	p-Isopropyltoluene	Napthalene	n-Propylbenzene	Tetrachloroethene	Toluene	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Methyl-tert-butyl ether (MtBE)	Xylenes, m-, p-	Xylenes, o-
B-1	2.0	6/27/2005	ND	450	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.0	6/27/2005	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.0	6/27/2005	NA	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-2	5.0	6/27/2005	ND	220	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10.0	6/27/2005	0.62	3100	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.0	6/27/2005	NA	240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-3	5.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-4	5.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-5	5.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-8	1.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-9	1.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
US EPA Region IX PRGs mg/kg						0.64	240	220	0.28		400			1.7	240	0.48	520	2.9	52	210	17	270	270
Laboratory Reporting Limit mg/kg			0.50	10	20	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
CRWQCB ESLs/MCLs** mg/kg			500	1,000	10,000	0.044			0.0045	0.19	3.3			0.46		0.087	2.9	0.026			0.023	2.3	2.3

NA= Not Analyzed, B-1 and B-2 not analyzed for VOCs (15 feet bgs samples analyzed for diesel range hydrocarbons only)

*shaded boxes indicate contaminants for which there is no established PRG/ESL.

**Environmental Screening Levels come from California Regional Water Quality Control Board (CRWQCB), San Francisco Region, *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, February 2005. Table A for shallow soils where groundwater is a current or potential source of drinking water

Table 2

Summary of Chemical Analysis of Soil-Vapor Samples Collected from Soil Borings V-1 through V-3, EPA Test Methods GCMS and 8260B.

Location	Depth (ft)	Date	TPH-gasoline	Volatile Organic Compounds (VOCs) ug/L											
				Benzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Ethylbenzene	Napthalene	Tetrachloroethene	Toluene	Trichloroethene	Methyl-tert-butyl ether (MtBE)	Vinyl Chloride	Xylenes, m-, p-	Xylenes, o-
V-1	10.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
V-2	10.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
V-3	10.0	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWQCB Environmental Screening Levels ug/L*			**26**	**12**	**1.5**	**7.3**	**420**	**0.071**	**0.41**	**63**	**1.2**	**9.4**	**0.032**	**150**	**150**
Laboratory Reporting Limit ug/L			60	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	1.0

*source is INTERIM FINAL - February 2005, SF Bay Region, Table E-2 - Soil Gas to Indoor Air

Table 3

Summary of Metals Analysis of Select Soil Samples Collected from Soil Borings HA-1 through HA-3 and B-10 and B-11, EPA Test Method 6010/7000

Location	Depth (ft)	Date	CAM 17 Metals mg/kg											
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Mercury	Vanadium	Zinc
HA-6	1.0	6/27/2005	**3.4**	79	ND	ND	16	6.5	30	22	6.9	ND	36	45
HA-7	1.0	6/27/2005	**1.7**	89	ND	ND	12	6.3	5.4	3.3	4.7	ND	34	30
HA-8	1.0	6/27/2005	**2.0**	69	ND	ND	11	4.5	8.2	4.4	4.2	ND	28	32
HA-9	1.0	6/27/2005	**1.9**	66	ND	ND	11	4.8	6.6	4.0	4.2	ND	30	32
US EPA PRGs mg/Kg			0.39	5,400	150	37	30	900	3,100	150	1,600	23	78	23,000
Typical background levels in California			0.6-11	133-1400	0.25-2.7	0.05-1.7	23-1579	2.7-46.9	9.1-96.4	12.4-97.1	9-509	0.05-0.90	39-288	88-236
Reporting Limit mg/Kg			1.0	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.02	5.0	10

*metal concentrations which exceed their respective US EPA PRGs are highlighted in bold print.

ND = Not detected above the given laboratory detection limits.

Table 4

Summary of Chemical Analysis of Select Soil Samples Collected from Soil Borings HA-1 through HA-6, HA-8, and HA-9, EPA Test Method 8081

Location	Depth (ft)	Date	Aldrin	Alpha-BHC	Beta-BHC	Delta-BHC	Gamma-BHC (Lindan	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	4,4'-DDM	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Heptachlor Epoxide	Toxaphene
HA-1	1	6/27/2005	ND	ND	ND	ND	ND	0.10	0.020	**1.8**	0.99	**2.83**	**0.18**	ND	ND	ND	0.049	**1.3**
	3	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-2	1	6/27/2005	ND	ND	ND	ND	ND	0.009	ND	0.29	0.072	0.362	**0.063**	ND	ND	ND	0.003	**0.78**
	3	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	ND	ND	ND	ND	ND
HA-3	1	6/27/2005	ND	ND	ND	ND	ND	0.009	0.012	0.10	0.098	0.21	0.020	ND	ND	ND	ND	**1.5**
	3	6/27/2005	ND	ND	ND	ND	ND	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34
HA-4	1	6/27/2005	ND	ND	ND	ND	ND	ND	ND	0.40	0.41	0.81	**0.21**	ND	ND	ND	ND	**2.9**
	3	6/27/2005	ND	ND	ND	ND	ND	ND	ND	0.002	ND	0.002	0.011	ND	ND	ND	ND	0.062
HA-5	1	6/27/2005	ND	ND	ND	ND	ND	ND	ND	0.24	0.23	0.47	**0.15**	ND	ND	ND	ND	**1.8**
	3	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	ND	ND	ND	ND	0.04
HA-8	1	6/27/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND	0.17
HA-9	1	6/27/2005	ND	ND	ND	ND	ND	ND	ND	0.032	0.014	0.046	0.023	ND	ND	ND	ND	0.12
US EPA Region IX PRGs			0.029	0.09	0.32	NA	0.44	1.6	2.4	1.7	1.7	1.7	0.03	370	370	18	0.052	0.44
Reporting Limit mg/Kg			0.001	0.001	0.001	0.001	0.001	0.02	0.002	0.002	0.002	0.001	0.002	0.001	0.002	0.002	0.001	0.02

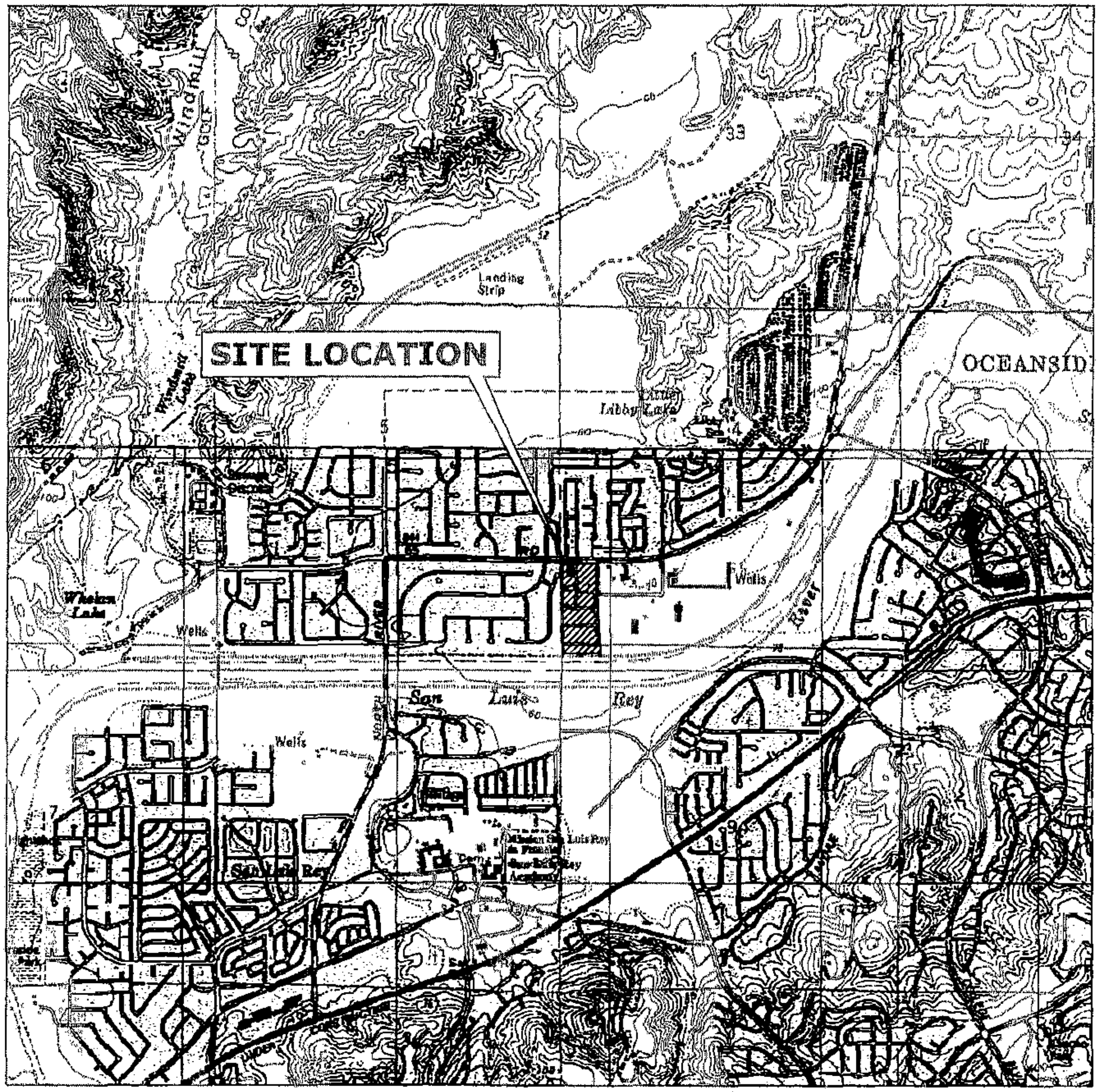
*Concentrations which exceed their respective US EPA PRGs are highlighted in bold print

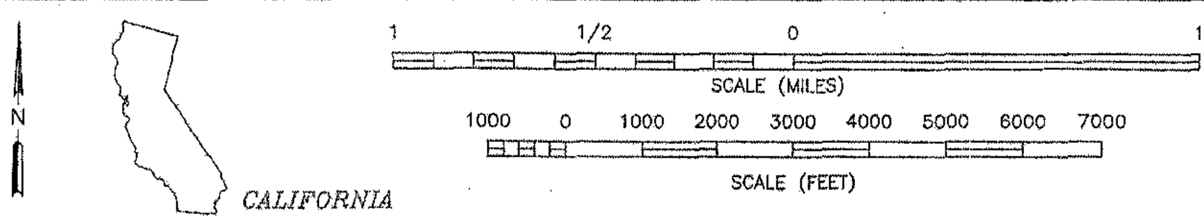
**4,4'-DDM is the sum of the concentrations of 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

ND = Not detected above laboratory detection threshold

NA = PRG not established

FIGURES

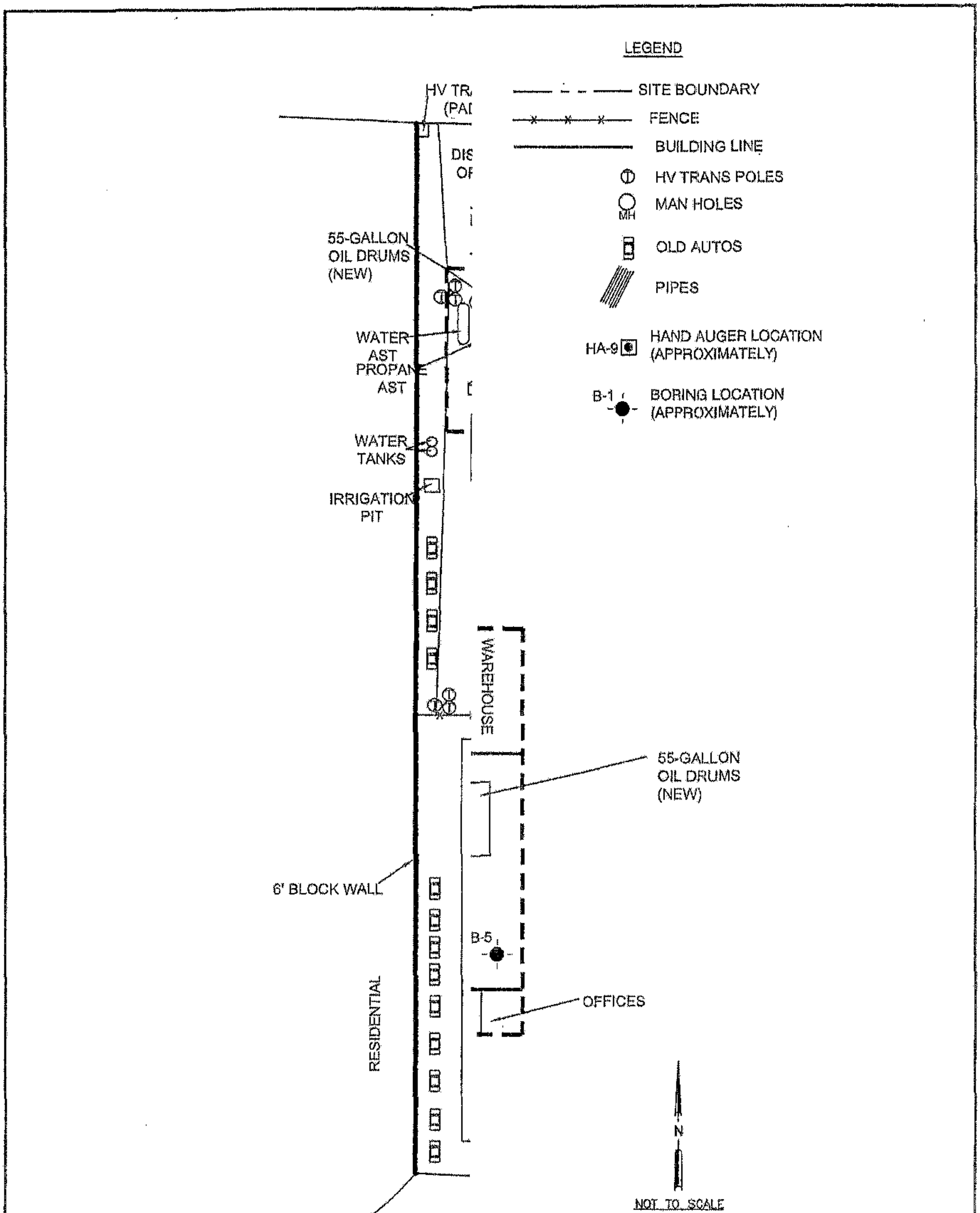




REFERENCE: USGS 7.5 MINUTE QUADRANGLE; SAN LUIS REY, CALIFORNIA; 1995

SECOR 25864 BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA PHONE: (909) 335-6116/335-6120 (FAX)	FOR: THE OLSON COMPANY 4617 NORTH RIVER ROAD OCEANSIDE, CALIFORNIA		SITE LOCATION MAP		FIGURE: 1
	JOB NUMBER: 04OT.29220.92	DRAWN BY: CTORRES	CHECKED BY:	APPROVED BY:	DATE: 06/06/05

FILEPATH:R:\Cad_Files\Projects\Office\004\olson co\29220\92\04OT2992092-1SLM.dwg modified by ssimmons on Jul 15, 2005 at 17:58



	SITE PLAN WITH BORING & HAND AUGER LOCATIONS		FIGURE: 2
RES	CHECKED BY:	APPROVED BY:	DATE: 06/06/05

l by ssimmons on Jul 15, 2005 at 17:54

APPENDIX A
LABORATORY DATA SHEETS AND QA/QC RESULTS
CHAIN-OF –CUSTODY RECORDS
BORING LOGS

Centrum
Analytical
Laboratories, Inc.

Client:	SECOR 25864-F Business Center Drive Redlands, CA 92374-4515	Date Sampled: Date Received: Job Number:	06/27/05 06/27/05 26517

Project: Oceanside Ph. II

CASE NARRATIVE

The following information applies to samples which were received on 06/27/05:

The vapor samples were received at the laboratory in intact Tedlar bags.

The soil samples were received at the laboratory directly from the field and were cooled to 4°C upon arrival. The sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested. The date of issue for this report is 07/13/05.

Report approved by:

Tom Wilson 2005.07.13 12:58:08 -07'00'

Tom Wilson
Laboratory Director

ELAP Lab# 2419, 2479, 2527, 2373, 2562

RL: Reporting Limit -- The lowest level at which the compound can be reliably detected under normal laboratory conditions.
ND: Not Detected -- The compound was analyzed for, but was not found to be present at or above the Reporting Limit.
NA: Not Analyzed -- This compound was not on the list of compounds requested for analysis.

951•779•0310 or 800•798•9336 fax 951•779•0344
www.centrum-labs.com 1401 Research Park Drive, Suite 100, Riverside, CA 92507

Centrum Analytical Laboratories, Inc.

Metals by EPA 6010B and EPA 7471A

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No:	26517	Date Digested:	06/28/05
Matrix:	Soil	Date Analyzed:	06/28/05
Analyst:	TLB	Batch Number:	6010S3368 7471S1239

		Sample ID:	Blank	HA-6@1'	HA-7@1'	HA-8@1'	HA-9@1'
Metals	Method	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Antimony	6010B	5.0	ND	ND	ND	ND	ND
Arsenic	6010B	1.0	ND	3.4	1.7	2.0	1.9
Barium	6010B	0.50	ND	79	89	69	66
Beryllium	6010B	0.50	ND	ND	ND	ND	ND
Cadmium	6010B	0.50	ND	ND	ND	ND	ND
Chromium	6010B	0.50	ND	16	12	11	11
Cobalt	6010B	0.50	ND	6.5	6.3	4.5	4.8
Copper	6010B	0.50	ND	30	5.4	8.2	6.6
Lead	6010B	1.0	ND	22	3.3	4.4	4.0
Molybdenum	6010B	5.0	ND	ND	ND	ND	ND
Nickel	6010B	1.0	ND	6.9	4.7	4.2	4.2
Selenium	6010B	5.0	ND	ND	ND	ND	ND
Silver	6010B	2.0	ND	ND	ND	ND	ND
Thallium	6010B	10.	ND	ND	ND	ND	ND
Vanadium	6010B	5.0	ND	36	34	28	30
Zinc	6010B	10.	ND	45	30	32	32
Mercury	7471A	0.02	ND	ND	ND	ND	ND

Centrum
Analytical
Laboratories, Inc.

Extractable Hydrocarbons as Diesel by mod. EPA 8015B

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No.:	26517	Date Added:	07/07/05
Matrix:	Soil	Date Extracted:	07/07/05
Analyst:	AW	Date Analyzed:	07/07-08/05
		Batch Number:	8015DS3506

Sample ID	Reporting Limit mg/Kg	Diesel mg/Kg	Surrogate (OTP) Limit: 50 - 150%
Method Blank	10	ND	92 %
B-1@15'	10	45	95 %
B-2@15'	10	240	93 %

Centrum Analytical Laboratories, Inc.

C6 to C40 Hydrocarbons by GC/FID

Client:	SECOR		Date Sampled:	06/27/05
Project:	Oceanside Ph. II		Date Received:	06/27/05
Job No.:	26517		Batch Number:	SH2GASS314
Matrix:	Soil			8015DS3499
Analyst:	RV / AW			

Carbon Chain Length:		C6-C12	C12-C22	C22-C40
Reporting Limits:		0.50	10	20
Units:		mg/Kg	mg/Kg	mg/Kg
Method Blank		ND	ND	ND
B-1@5'	14	ND	ND	ND
B-1@2'	17	ND	450	140
B-2@5'	19	ND	220	39
B-2@10'	20	0.62	3,100	350
B-3@5'	23	ND	ND	ND
B-4@5'	27	ND	ND	ND
B-5@5'	31	ND	ND	ND
HA-8@1'	38	ND	ND	ND
HA-9@1'	39	ND	ND	ND
Method:		GC/FID	GC/FID	GC/FID
Date Extracted:		N/A	06/28/05	06/28/05
Date Analyzed:		06/29/05	06/28-29/05	06/28-29/05

Centrum Analytical Laboratories, Inc.

QC Sample Report - Extractable Hydrocarbons as Diesel by GC/FID

Matrix: Soil
Batch Number: 8015DS3499

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample

Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail
Diesel	100	97	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
Diesel	96.9	104.5	8%	25%	Pass

Analytical Notes:

MS: Matrix Spike
MSD: Matrix Spike Duplicate
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate

Centrum
Analytical
Laboratories, Inc.

QC Sample Report - Volatile Hydrocarbons as Gasoline by GCMS

Matrix: Vapor
Batch Number: MS4TPHGV502

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample

Compound	Spike Concentration (mg/L)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail
Gasoline	2.0	89	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	MS Sample Result (mg/L)	MSD Sample Result (mg/L)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
Gasoline	1.79	1.69	6%	25%	Pass

Analytical Notes:

MS: Matrix Spike
MSD: Matrix Spike Duplicate

LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate

Centrum Analytical Laboratories, Inc.

Organochlorine Pesticides by EPA 8081A

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No.:	26517	Date Extracted:	07/01/05
Matrix:	Soil	Date Analyzed:	07/01-05/05
Analyst:	SEC	Batch Number:	PESTS0903

Sample ID:		HA-9@1'
Pesticides	RL	mg/Kg
Aldrin	0.001	ND
Alpha-BHC	0.001	ND
Beta-BHC	0.001	ND
Delta-BHC	0.001	ND
Gamma-BHC (Lindane)	0.001	ND
Chlordane	0.010	ND
4,4'-DDD	0.002	ND
4,4'-DDE	0.002	0.032
4,4'-DDT	0.002	0.014
Dieldrin	0.002	0.023
Endosulfan I	0.001	ND
Endosulfan II	0.002	ND
Endosulfan sulfate	0.002	ND
Endrin	0.002	ND
Endrin Aldehyde	0.002	ND
Endrin Ketone	0.010	ND
Heptachlor	0.001	ND
Heptachlor Epoxide	0.001	0.001
Methoxychlor	0.010	ND
Toxaphene	0.020	0.12

Surrogates in % Recovery (Acceptance Limits: 50 - 150%)

Sample ID:	HA-9@1'
Tetrachloro-m-xylene	87

Centrum Analytical Laboratories, Inc.

QC Sample Report - Organochlorine Pesticides by EPA 8081A

Matrix: Soil
Batch Number: PESTS0903

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample

Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail
Lindane	0.0067	98	71 - 124	Pass
Heptachlor	0.0067	110	87 - 132	Pass
Aldrin	0.0067	108	78 - 125	Pass
Dieldrin	0.026	104	85 - 113	Pass
Endrin	0.026	107	84 - 125	Pass
DDT	0.026	106	88 - 119	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
Lindane	0.0065	0.0059	10%	25%	Pass
Heptachlor	0.0073	0.0068	7%	25%	Pass
Aldrin	0.0072	0.0065	10%	25%	Pass
Dieldrin	0.0278	0.0255	9%	25%	Pass
Endrin	0.0285	0.0265	7%	25%	Pass
DDT	0.0283	0.0267	6%	25%	Pass

Analytical Notes:

MS: Matrix Spike
MSD: Matrix Spike Duplicate
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate

Centrum Analytical Laboratories, Inc.

QC Sample Report - Organochlorine Pesticides by EPA 8081A

Matrix: Soil
Batch Number: PESTS0906

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample

Compound	Spike Concentration (mg/Kg)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail
Lindane	0.0067	92	71 - 124	Pass
Heptachlor	0.0067	103	87 - 132	Pass
Aldrin	0.0067	94	78 - 125	Pass
Dieldrin	0.026	95	85 - 113	Pass
Endrin	0.026	97	84 - 125	Pass
DDT	0.026	93	88 - 119	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	MS Sample Result (mg/Kg)	MSD Sample Result (mg/Kg)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
Lindane	0.0061	0.0058	5%	25%	Pass
Heptachlor	0.0068	0.0068	0%	25%	Pass
Aldrin	0.0062	0.0062	0%	25%	Pass
Dieldrin	0.0254	0.0251	1%	25%	Pass
Endrin	0.0259	0.0255	2%	25%	Pass
DDT	0.0249	0.0249	0%	25%	Pass

Analytical Notes:

MS: Matrix Spike
MSD: Matrix Spike Duplicate
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate

Centrum Analytical Laboratories, Inc.

Volatile Organic Compounds by EPA 8260B

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No.:	26517	Date Analyzed:	07/01/05
Matrix:	Soil	Batch Number:	MS58260S004
Analyst:	RL		

Sample ID:		Blank	B-3@5'	B-4@5'	B-5@5'	HA-8@1'	HA-9@1'
Compounds	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.010	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.050	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.010	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MtBE)	0.005	ND	ND	ND	ND	ND	ND
Naphthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.005	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes, m-,p-	0.002	ND	ND	ND	ND	ND	ND
Xylene, o-	0.001	ND	ND	ND	ND	ND	ND

Surrogates in % Recovery (Acceptance Limits: 70 - 130%)

Sample ID:	Blank	B-3@5'	B-4@5'	B-5@5'	HA-8@1'	HA-9@1'
Dibromofluoromethane	108	97	101	103	102	99
Toluene-d8	91	98	101	103	101	100
Bromofluorobenzene	90	95	98	95	93	96

Centrum Analytical Laboratories, Inc.

Volatile Organic Compounds by GCMS

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No.:	26517	Date Analyzed:	06/27/05
Matrix:	Vapor	Batch Number:	MS48260W3502
Analyst:	GF		

Sample ID:		Blank	V-1	V-2	V-3
Compounds	RL	µg/L of air	µg/L of air	µg/L of air	µg/L of air
Acetone	50	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	5.0	ND	ND	ND	ND
Benzene	1.0	ND	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND
Bromodichloromethane	1.0	ND	ND	ND	ND
Bromoform	1.0	ND	ND	ND	ND
Bromomethane	2.0	ND	ND	ND	ND
tert-Butanol (TBA)	10	ND	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND	ND
n-Butylbenzene	1.0	ND	ND	ND	ND
sec-Butylbenzene	1.0	ND	ND	ND	ND
tert-Butylbenzene	1.0	ND	ND	ND	ND
Carbon disulfide	10	ND	ND	ND	ND
Carbon tetrachloride	1.0	ND	ND	ND	ND
Chlorobenzene	1.0	ND	ND	ND	ND
Chloroethane	1.0	ND	ND	ND	ND
Chloroform	1.0	ND	ND	ND	ND
Chloromethane	2.0	ND	ND	ND	ND
2-Chlorotoluene	1.0	ND	ND	ND	ND
4-Chlorotoluene	1.0	ND	ND	ND	ND
Dibromochloromethane	1.0	ND	ND	ND	ND
1,2-Dibromoethane	1.0	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND
Dibromomethane	1.0	ND	ND	ND	ND
1,2-Dichlorobenzene	1.0	ND	ND	ND	ND
1,3-Dichlorobenzene	1.0	ND	ND	ND	ND
1,4-Dichlorobenzene	1.0	ND	ND	ND	ND
Dichlorodifluoromethane	1.0	ND	ND	ND	ND
1,1-Dichloroethane	1.0	ND	ND	ND	ND
1,2-Dichloroethane	1.0	ND	ND	ND	ND
1,1-Dichloroethene	1.0	ND	ND	ND	ND
cis-1,2-Dichloroethene	1.0	ND	ND	ND	ND
trans-1,2-Dichloroethene	1.0	ND	ND	ND	ND
1,2-Dichloropropane	1.0	ND	ND	ND	ND
1,3-Dichloropropane	1.0	ND	ND	ND	ND
2,2-Dichloropropane	1.0	ND	ND	ND	ND
1,1-Dichloropropene	1.0	ND	ND	ND	ND

Centrum Analytical Laboratories, Inc.

QC Sample Report - Volatile Organic Compounds by GCMS

Matrix: Vapor
Batch Number: MS48260V3502

Batch Accuracy Results

Spike Sample ID: Laboratory Control Sample

Compound	Spike Concentration (µg/L)	Spike Sample % Recovery	% Recovery Acceptance Limits	Pass/Fail
1,1-Dichloroethene	50	91	70 - 130	Pass
Benzene	50	95	70 - 130	Pass
Trichloroethene	50	105	70 - 130	Pass
Toluene	50	99	70 - 130	Pass
Chlorobenzene	50	91	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	MS Sample Result (µg/L)	MSD Sample Result (µg/L)	Relative Percent Difference (RPD)	RPD Acceptance Limit	Pass/Fail
1,1-Dichloroethene	45.73	46.24	1%	25%	Pass
Benzene	47.61	47.66	0%	25%	Pass
Trichloroethene	52.71	53.47	1%	25%	Pass
Toluene	49.58	51.08	3%	25%	Pass
Chlorobenzene	45.53	42.77	6%	25%	Pass

Analytical Notes:

MS: Matrix Spike
MSD: Matrix Spike Duplicate
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate

Centrum Analytical Laboratories, Inc.

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Fax: 562.498.8617

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Chain of Custody Record

Centrum Job # 26517

Project No: 0407.29220.92
Project Name: Oceanside Ph II
Project Manager: JUSTIN HONE
Phone:
Fax:
Client Name: (Report and Billing) SECOR
Address: (Report and Billing)

Please Circle Analyses Requested

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT
- ☐ Other ________

*Requires PRIOR approval, additional charges apply

Requested due date: ________

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	LUFT Diesel, or EPA 8015B DRO	LUFT Gas, or EPA 8015B GRO	Fuel ID (TVH, TEH), Carbon Chain (specify ranges) C6-C40	8021B: BTEX/MtBE Only		[redacted] or 624	VOCs: BTEX/Oxygenates Only	SVOCs: 8270C, or 625	8081A/8082: Pesticides, or PCBs, or Pest/PCB		Metals: Title 22 (CAM), or RCRA, or PP	Metals: TCLP, STLC	pH, TDS, TSS	418.1 (TRPH), or 413.2, or 1664		Remarks/Special Instructions
11	HA-4@3'	6/27/05	1304	soil		1-4oz glass																HOLD
12	HA-5@1'		1310												X							
13	HA-5@3'		1314																			HOLD
14	B-1@5'		0840						X			[redacted]										
15	B-1@10'		1150			metal sleeve																HOLD
16	B-1@15'		1155				X															~~HOLD~~ added 16 per J. Hone 452pm
17	B-1@2'		0835			1-4oz glass			X			[redacted]										[redacted]
18	B-2@2'		0850																			HOLD
19	B-2@5'		0855						X			[redacted]										
20	B-2@10'		1210			metal sleeve			X			[redacted]										

1) Relinquished by: (Sampler's Signature) [signature] Date: 6/27/5 Time: 1510
2) Received by: Date: Time:
3) Relinquished by: Date: Time:
4) Received by: Date: Time:
5) Relinquished by: Date: Time:
6) Received for Laboratory by: [signature] Date: 6/27 Time: 1510

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

Laboratory Notes:

To be completed by Laboratory personnel:
- Samples chilled? ☐ Yes ☐ No ☒ From Field
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Additional Report Formats:
- ☐ LARWQCB ☐ EDF (Geotracker)
- ☐ EDD (GISKEY) ☐ EDD (Other)*

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Sample Locator No. D/SH

Centrum Analytical Laboratories, Inc.

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Voice: 951.779.0310 • 800.798.9336
Fax: 951.779.0344

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Voice: 562.498.7005
Fax: 562.498.8617

www.centrum-labs.com lab@centrum-labs.com

Chain of Custody Record

Centrum Job # 205147

Page 4 of 4

Project No. 0407.29220.92

Project Name: Oceanside Ph II

Project Manager:

Phone:

Fax:

Client Name: (Report and Billing) SECOR

Address: (Report and Billing)

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	LUFT Diesel, or EPA 8015B DRO	LUFT Gas, or EPA 8015B GRO	Fuel ID (TVH, TEH), Carbon Chain (specify ranges) C6-C40	8021B: BTEX/MtBE Only	VOCs: 8260B or 624	VOCs: BTEX/Oxygenates Only	SVOCs: 8270C, or 625	8081A/8082: Pesticides, or PCBs, or Pest/PCB	Metals: Title 22 (CAM), or RCRA, or PP	Metals: TCLP, STLC	pH, TDS, TSS	418.1 (TRPH), or 413.2, or 1664	Remarks/Special Instructions
30	B-5 @ 2'	4/27/05	0935	soil		4oz (1) - glass													HOLD
31	B-5 @ 5'		0940			↓			X		X								
32	B-5 @ 10'		1050			metal sleeve													HOLD
33	B-5 @ 15'		1057			↓													HOLD
34	HA-6 @ 1'		0920		USED BATT.	1 4oz glass									X				
35	HA-6 @ 3'		0925																HOLD
36	HA-7 @ 1'		0910												X				
37	HA-7 @ 3'		0915		↓														HOLD
38	HA-8 @ 1'		1000		SOIL MOUND				X		X			X	X				
39	HA-9 @ 1'	↓	1005	↓		↓			X		X			X	X				

Turn-Around Time

☐ 24 Hr. RUSH*
☐ 48 Hr. RUSH*
☒ Normal TAT
☐ Other ________

*Requires PRIOR approval, additional charges apply

Requested due date: ______

1) Relinquished by: (Sampler's Signature) [signature] Date: 4/27/05 Time: 1510

2) Received by: Date: Time:

3) Relinquished by: Date: Time:

4) Received by: Date: Time:

5) Relinquished by: Date: Time:

6) Received for Laboratory by: [signature] Date: 4/27 Time: 1510

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☒ From Field

Custody seals? ☐ Yes ☒ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal

☐ Client will pick up
☐ Return to client
☒ Lab disposal

Laboratory Notes:

Additional Report Formats:

☐ LARWQCB ☐ EDF (Geotracker)
☐ EDD (GISKEY) ☐ EDD (Other)*

Sample Locator No. D/SH

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

PRELIMINARY RESULTS
SUBJECT TO CHANGE
PENDING QA/QC REVIEW

Organochlorine Pesticides by EPA 8081A

Client:	SECOR	Date Sampled:	06/27/05
Project:	Oceanside Ph. II	Date Received:	06/27/05
Job No.:	26598	Date Added:	07/14/05
Matrix:	Soil	Date Extracted:	07/14/05
Analyst:	SEC	Date Analyzed:	07/13-15/05
		Batch Number:	PESTS0909

Sample ID:		Blank	HA-2@3'	HA-3@3'	HA-4@3'	HA-5@3'
Pesticides	RL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aldrin	0.001	ND	ND	ND	ND	ND
Alpha-BHC	0.001	ND	ND	ND	ND	ND
Beta-BHC	0.001	ND	ND	ND	ND	ND
Delta-BHC	0.001	ND	ND	ND	ND	ND
Gamma-BHC (Lindane)	0.001	ND	ND	ND	ND	ND
Chlordane	0.010	ND	ND	0.008	ND	ND
4,4'-DDD	0.002	ND	ND	ND	ND	ND
4,4'-DDE	0.002	ND	ND	ND	0.002	ND
4,4'-DDT	0.002	ND	ND	ND	ND	ND
Dieldrin	0.002	ND	0.003	0.023	0.011	0.004
Endosulfan I	0.001	ND	ND	ND	ND	ND
Endosulfan II	0.002	ND	ND	ND	ND	ND
Endosulfan sulfate	0.002	ND	ND	ND	ND	ND
Endrin	0.002	ND	ND	ND	ND	ND
Endrin Aldehyde	0.002	ND	ND	ND	ND	ND
Endrin Ketone	0.010	ND	ND	ND	ND	ND
Heptachlor	0.001	ND	ND	ND	ND	ND
Heptachlor Epoxide	0.001	ND	ND	ND	ND	ND
Methoxychlor	0.010	ND	ND	ND	ND	ND
Toxaphene	0.020	ND	ND	0.34	0.062	0.040

Surrogates in % Recovery (Acceptence Limits: 50 - 150%)

Sample ID:	Blank	HA-2@3'	HA-3@3'	HA-4@3'	HA-5@3'
Tetrachloro-m-xylene	78	90	87	93	92

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CORE PROBE	HAND-AUGER / DIRECT PUSH	B-2

Time Start / Time End	Boring Diam.	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 Lb)
Time Start 0845 Time End 1220	1.5"	—	NOT ENCOUNTERED	15'	

Job No	Project	Location
040T. 29220. 92	OCEANSIDE PHASE II	AST- SOUTH

WELL CONSTRUCTION Casing Dia.	Depth/Sampling Method	Interval	Blow Count	Graphic Log	Sample	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU, ppm	COMMENTS
Hydrated granular bentonite	2 (H.A.)			X	B-2 @2'	Sand, fine grain, well-graded, no odor / no moisture	0.5	0850
	5 (H.A.)			X	B-2 @5'	Sand, coarse grain, well-graded, no odor / no moisture	0.8	0855
	10 (D.P.)			X	B-2 @10'	Sand, coarse grain, well-graded slight HC odor, no moisture	11.6	1210
	15 (D.P.)			X	B-2 @15'	SAME AS ABOVE	4.3	1215

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CoreProbe	Hand-Auger / DirectPush	B-4

Time Start 1010 / Time End 1045	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 Lb)
	1.5"	——	NOT ENCOUNTERED	15'	——

Job No	Project	Location
0407.29220.92	OCEANSIDE PHASE II	SOUTH COURTYARD

WELL CONSTRUCTION Casing Dia	Depth	Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc.	HNU, ppm	COMMENTS
cement	0						ASPHALT		
Hydrated granular Bentonite	1								
	2	H.A.			X	B-4 @2'	Sand, fine grain, well-graded, no moisture, no odor	1.8	1015
	3								
	4								
	5				X	B-4 @5'	Sand, coarse grain, well-graded, no moisture, no odor	1.5	1020
	6								
	7								
	8								
	9								
	0	D.P.			X	B-4 @10'	SAME AS ABOVE	1.3	1030
	1								
	2								
	3								
	4								
	5				X	B-4 @15'	SAME AS ABOVE	1.2	1035
	6								
	7								
	8								
	9								
	0								

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CORE PROBE	HAND AUGER / DIRECTPUSH	V-1

Time Start 0820 / Time End 0900	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 Lb)
Time Start 0820 Time End 0900	1.5"	—	NOT ENCOUNTERED	10'	—

Job No	Project	Location
040T. 29220. 92	OCEANSIDE PHASE II	N - COURTYARD

WELL CONSTRUCTION Casing Dia.	Depth/ Sampling Method	Interval	Blow Count	Graphic Log	Sample *	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU, ppm	COMMENTS
Hyd. Gran. Bentonite	0							
	1							
	2					Sands fn → med. grain no odor / no moisture		
	3 H.A.							
	4							
	5							
	6							
	7							
	8 D.P.							
	9							
	0			☒	V-1	VAPOR		0855
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CoreProbe	Hand-Auger / DirectPush	V-3

Time Start	Time End	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 Lb)
0945	1010	1.5"	—	Not Encountered	10'	—

Job No	Project	Location
040T.29220.92	Oceanside Phase II	South - Courtyard

WELL CONSTRUCTION Casing Dia	Depth/ Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU ppm	COMMENTS
Hyd. Gran. Bentonite	0–5 H.A.					0–5: Sand, fine med. gr., no odor, no moisture		
	5–10 D.P.							
	10			X	V-3	VAPOR		1000

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CORE PROBE	HAND-AUGER / DIRECT PUSH	HA-2

Time Start / Time End	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop
1243 / 1249	1.5"	—	NOT ENCOUNTERED	3'	—

Job No	Project	Location
04CT. 29220. 92	OCEANSIDE PHASE II	SOUTH FIELD - N.

WELL CONSTRUCTION Casing Dia	Depth Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU, ppm	COMMENTS
BACKFILL w/ CUTTINGS	0							
	1			X	HA-2 @1'	Sand, med-coarse gr., no odor, no moisture		1245
	2							
	H.A. 3			X	HA-2 @3'	SAME AS ABOVE		1248
	4							
	5							
	6							
	7							
	8							
	9							
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CORE PROBE	HAND-AUGER / DIRECT R	HA-4

Time Start	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop
1258	1.5"	—	NOT ENCOUNTERED	3'	—
Time End 1305					

Job No	Project	Location
04CT. 29220. 92	OCEANSIDE PHASE II	SOUTH FIELD – NW

WELL CONSTRUCTION Casing Dia	Depth/ Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU, ppm	COMMENTS
BACKFILL W/ CUTTINGS	0							
	1			X	HA-4 @1'	Sand, med-coarse gr., no odor, no moisture		1300
	2							
	H.A. 3			X	HA-4 @3'	SAME AS ABOVE		1304
	4							
	5							
	6							
	7							
	8							
	9							
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method Equipment	Boring Number
JRH	6/26/05	CORE PROBE	HAND-AUGER / DIRECT PUSH	HA-6

Time Start	Time End	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 lb)
0916	0927	1.5"	—	NOT ENCOUNTERED	3'	—

Job No	Project	Location
040T. 29220. 92	OCEANSIDE PHASE II	BATTERIES - E.

WELL CONSTRUCTION Casing Dia	Depth	Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU ppm	COMMENTS
BACKFILL W/ CUTTINGS	0								
	1	H.A.			X	HA-6 @1'	Sand, med-coarse gr, no odor, no moisture		0920
	2								
	3				X	HA-6 @3'	SAME AS ABOVE		0925
	4								
	5								
	6								
	7								
	8								
	9								
	0								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	0								

Exhibit

(Sheet 1 of 1)

LOG OF BORING

Logged By	Date Drilled	Drilling Contractor	Method/Equipment	Boring Number
JRH	6/26/05	CoreProbe	Hand-Auger / DirectPush	HA-8

Time Start	Boring Diam	Surface Elev (ft)	Groundwater Depth (ft)	Total Depth (ft)	Hammer Drop (140 lb)
0955	1.5"	—	Not Encountered	1'	—
Time End 1003					

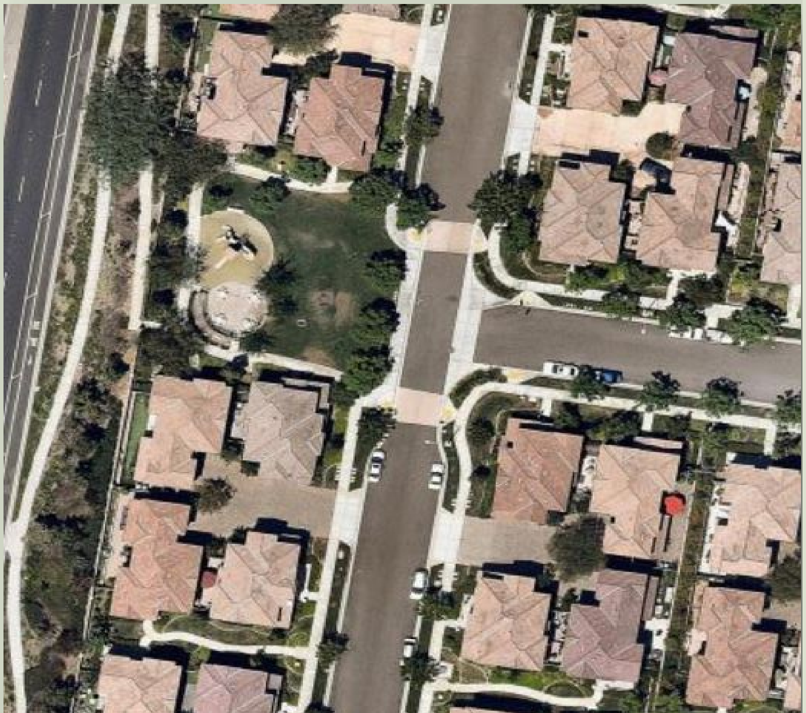
Job No	Project	Location
040T 29220 92	Oceanside Phase II	Fill Dirt - North

WELL CONSTRUCTION Casing Dia	Depth Sampling Method	Interval	Blow Count	Graphic Log	Sample #	DESCRIPTION Soil Type, Gradation, Consistency, Moisture, Color, USCS, etc	HNU ppm	COMMENTS
Cuttings	0							
	1 H.A.			X	HA8 @1'	FILL → poorly graded sands w/ silt (~20%), no odor no moisture		1000
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

Exhibit

(Sheet 1 of 1)

APPENDIX E
PLANNED BLOCK DEVELOPMENT PLAN FOR THE OVERLAY DISTRICT



TIERRA NORTE

Planned Block Development Overlay District

Development Plan

Draft
NOVEMBER 2021

TIERRA NORTE ROAD
Planned Block Development Overlay District

Development Plan

Applicants:
Nagata Brothers, LLC
So Cal Ag Properties, Inc.

Submitted To:
City of Oceanside
300 North Coast Highway
Oceanside, CA 92054

Prepared By:
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008

Draft
November 2021

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Chapter 1: Introduction

1.1 Executive Summary

The proposed Tierra Norte Planned Block Development Overlay District includes two (2) separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of Oceanside. The general regional location of the subject property is shown by *Figure 1.1*, while the surrounding neighborhood area is shown by *Figure 1.2*. Please note, the following terms; Property, Site, District, Overlay and Area are referred to throughout this document and are used interchangeably to describe the property included within the Overlay District.

This document will serve as the Planned Block Development Plan (PBDP) for the Overlay District. The intended purpose of the Planned Block Development Overlay District (PBD Overlay District) is to permit flexibility in land-use regulation and site development standards under control of the Planning Commission and City Council where flexibility or coordinated planning for a large site or a site under multiple ownership will enhance the potential for superior urban design.

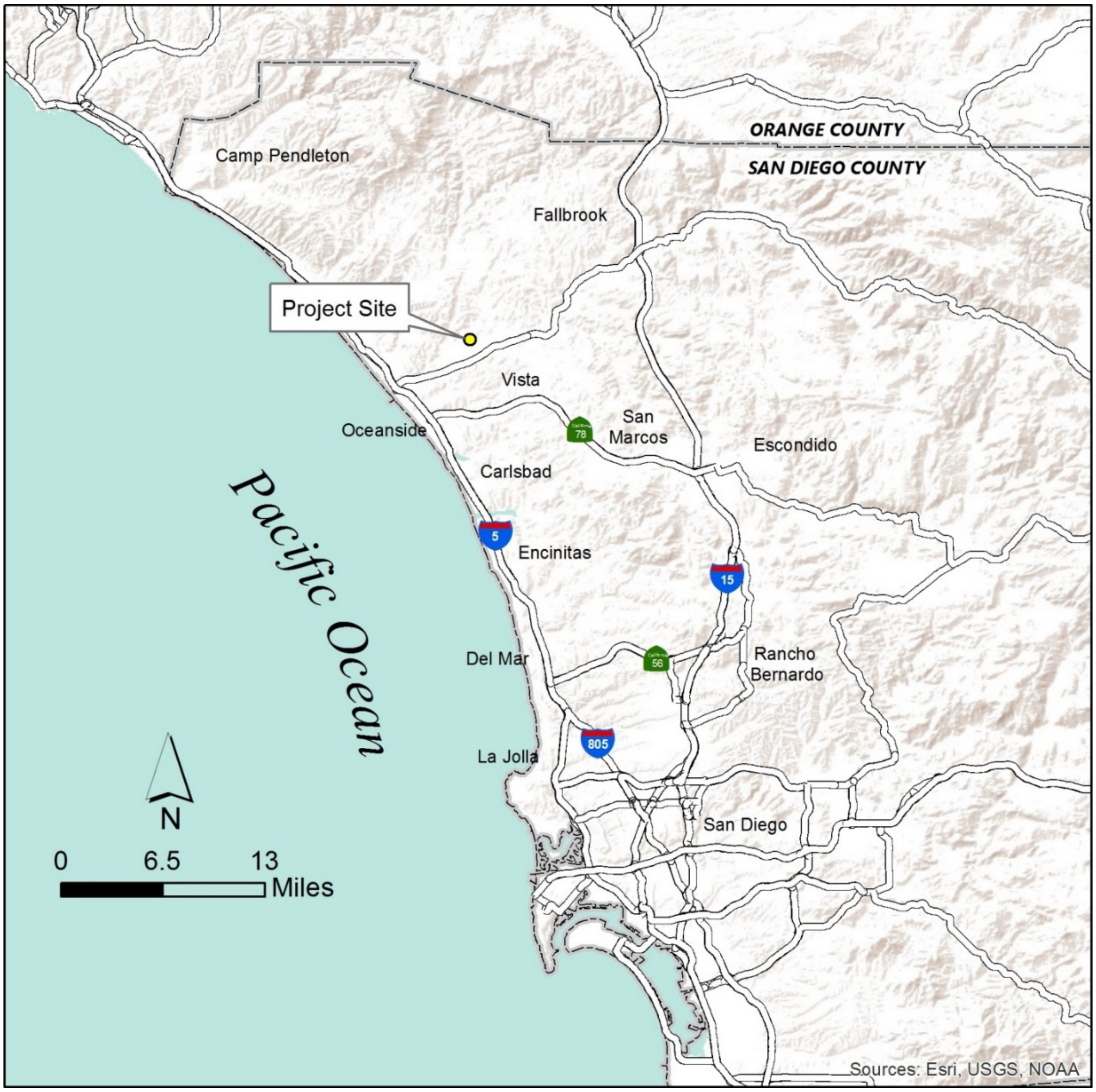
The PBDP establishes the land use and development standards that will regulate future residential development proposals for the property. The PBDP also presents site planning and architectural design criteria intended to promote development of a well thought-out, highly livable residential community which is compatible with the surrounding neighborhood. Detailed site layouts and residential building designs will ultimately be identified as part of future development plans specifically proposed for the property. While a comprehensive project may be proposed for the entire Overlay Area, it is recognized that each parcel exists under separate ownership and that multiple development plans may also be considered.

The PBDP Property is currently designated as Light Industrial (LI) by the City of Oceanside General Plan and as Limited Industrial (IL) under the City's Comprehensive Zoning Ordinance, hereinafter referred to as the "Zoning Ordinance". Associated project applications propose to establish the PBD Overlay District on this property, amend its land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

A medium-density residential use on this property would complement the existing residential uses located to the north and west while providing a transition from light industrial uses located to the east. Infill residential development represents an opportunity to repurpose this underutilized site by providing future housing opportunities for the Oceanside community.

Regional Map

Figure 1.1



Vicinity Map Figure 1.2

1.2 Site Context

The proposed PBD Overlay District is comprised of two (2) separate parcels located along the south side of North River Road as shown in *Figure 1.3*. The main access to the project area is proposed from North River Road, while Calle Joven is available to provide secondary and emergency access at points along the southern and eastern boundaries of the parcels.

Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property.

The surrounding North Valley Neighborhood presents a diversity of land uses situated between Camp Pendleton on the north and the San Luis Rey River on the south. The neighborhood area is home to a number of multi-family developments and single-family subdivisions ranging from just a few years to nearly 50 years old.

Neighborhood serving commercial uses are located nearby along the North River Road corridor at intersections with Douglas Drive, College Boulevard, and Vandegrift Boulevard. The North River Village mixed-use development and San Luis Rey Bus Transit Center (SLRBTC) are also located approximately within one (1) mile of the Overlay Area at the southeast corner of the North River Road and Vandegrift Boulevard intersection.

The PBD Area is well served by various infrastructure components. North River Road provides direct access and is designated as a major arterial through this area featuring dedicated bike lanes and improved sidewalks for pedestrians. Wet and dry utilities are also established adjacent to the site and can be improved as necessary in conjunction with future residential development on the site.

The San Luis Rey River and unpaved trail along its northern boundary are located to south of the PBDP Property, running from approximately 800 feet south of Parcel A to 175 feet south of Parcel B. The site features level topography with elevations generally ranging from 68 to 72 feet above sea level. The property is located within FEMA Flood Zone "X" within an area designated as protected from a100-year flood event by the existing levee.

PBD Overlay District Figure 1.3

The Tierra Norte PBD Overlay District represents an excellent opportunity to realize a medium density residential in-fill development on a site surrounded by properties with a mixture of land use and zoning designations, as follows:

- To the west is a developed single-family residential subdivision zoned Residential Estate – B (RE-B) consisting of 270 residences.

- The properties to the east are designated under the Light Industrial (LI) land use category with the corresponding zoning designation of Limited Industrial (IL). The property to the southeast consists of parking and support areas for the Oceanside Auto Auction. A recreational vehicle/self-storage use is also located farther to the east. This light industrial area extends east to the San Luis Rey River boundary.

- The properties located along the north side of North River Road in this area are generally developed residential parcels and include land use designations of Medium Density – C Residential (MDC-R), Medium Density – B Residential (MDB-R), and Medium Density – A Residential (MDA-R). The corresponding zoning categories for these properties are Medium Density Residential C (RM-C), Medium Density Residential B (RM-B), Medium Density Residential A (RM-A), and PD-22 (Planned Development for Habitat for Humanity single-family residential project). The established uses in this area consist of multi-family condominiums and apartments, mobile home communities, and single-family development.

- The area on the south side of North River Road that is currently designated for light industrial uses, including the proposed PBD Overlay District, encompasses 10 contiguous parcels totaling roughly 112 acres. Approximately 74 acres are dedicated to the auto auction site and 12 acres to the recreational vehicle storage facility. The remaining approximate 26 acres comprise the proposed PBD Overlay District.

- Primary vehicle access to the PBD Site is anticipated via North River Road. Secondary and emergency access to the site is available via connections to Calle Joven. An existing emergency access drive running between Parcels A and B serves the auto auction property and can be maintained as a part of future development proposals – either along its current alignment or in conjunction with internal circulation routes designed with a future project.

Chapter 2: Land Use and Residential Building Typology

2.1 Land Use Summary

The property comprising the Tierra Norte PBD Overlay District is currently designated as Light Industrial (LI) under the City's General Plan. In addition to establishing the Planned Block Overlay District, accompanying project applications propose to designate the property as Medium Density - C Residential (MDC-R) under the General Plan in order to allow for appropriate medium density residential development on the site in the future.

The proposed medium-density residential use will provide an effective transition between existing light industrial uses located to the east, and residential uses located to the west and north. The corresponding PBD Overlay District Area is shown along with Existing and Proposed Land Use and Zoning designations in *Figures 2.1 & 2.2, respectively*.

Land use summary information for the PBD Overlay District is presented in *Table 1* showing corresponding land use designations, residential density, and potential dwelling unit range. The MDC-R designation establishes a density range of 15.1 – 20.9 dwelling units per acre with a potential overall development range of between 359 and 497 dwelling units. However, this PBDP institutes a dwelling unit 'cap' with a maximum allowance of only 400 dwelling units for the entire Overlay District – consistent with the lower end density of the MDC-R land use category (16.8 du/ac).

The development potential of each parcel is also capped accordingly based on a percentage of its size in relation to the overall PBD Area as presented in Table 1. As part of this PBDP, a redistribution of dwelling units between each parcel may be proposed in conjunction with separate development applications unique to each parcel. Any proposed density transfer shall be indicated via a binding agreement between the property owners of each parcel. Such agreement shall be included as part of the corresponding development application submitted to the City of Oceanside.

Implementation of this density transfer mechanism requires a corresponding reduction of dwelling units from the cap amount of other parcel(s) so that the overall maximum cap of 400 dwelling units is not exceeded. The maximum dwelling unit quantities presented in Table 1 do not preclude proposals for lower unit counts and densities in conjunction with future development plans.

Table 1 - PBD Overlay District Land Use Summary

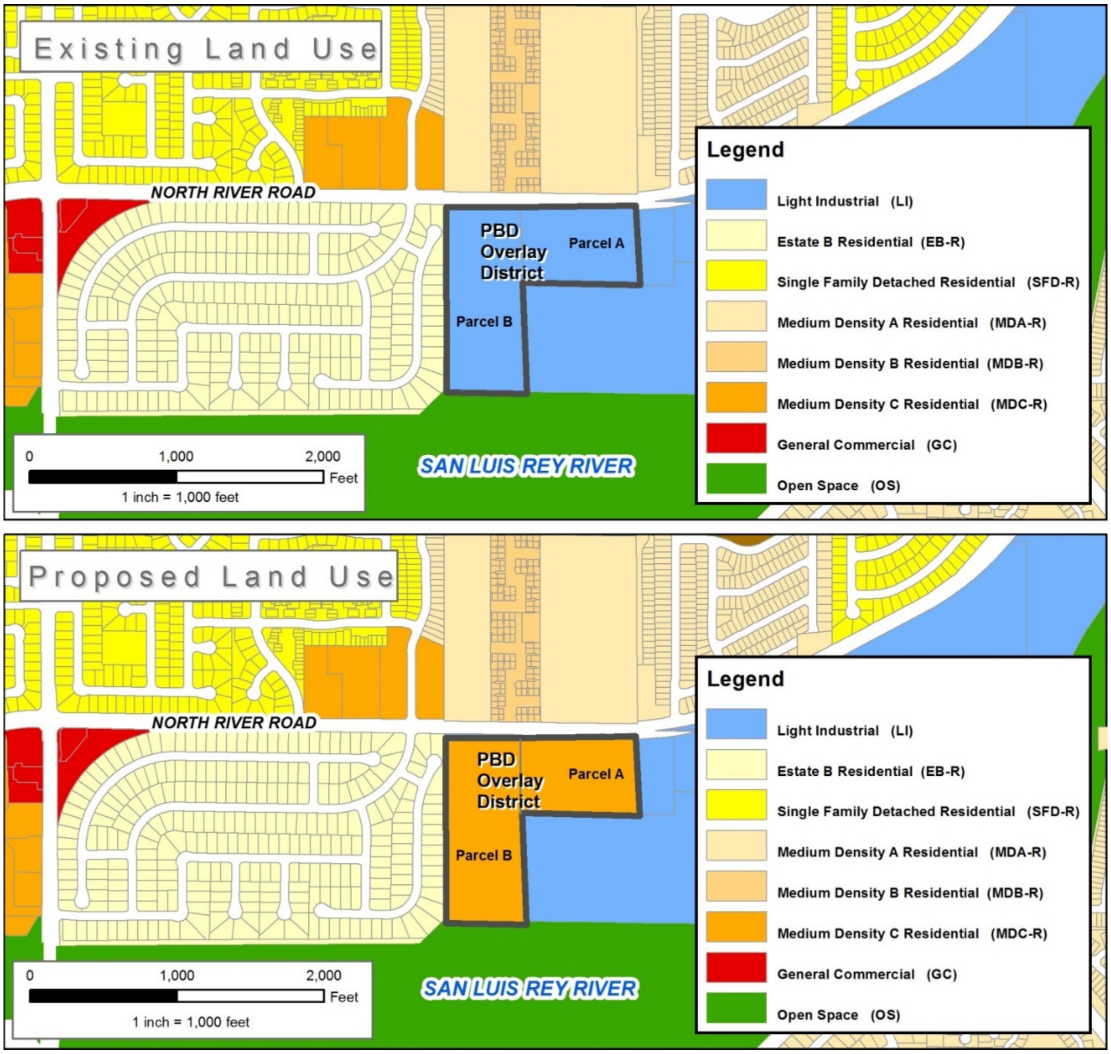
Area	Gross Developable Acres	Existing General Plan Land Use	Proposed General Plan Land Use	Land Use Density (du/ac)	Possible Dwelling Unit Range	Dwelling Unit Cap[1]
Parcel A **% of Total**	7.9[2] (33% of 23.8)	Light Industrial (LI)	Medium Density -C- Residential (MDC-R)	15.1 – 20.9	119 - 165	132 (33% of 400)
Parcel B **% of Total**	15.9 (67% of 23.8)	Light Industrial (LI)	Medium Density -C- Residential (MDC-R)	15.1 – 20.9	240 - 332	268 (67% of 400)
Totals	23.8				359 - 497	
Maximum Number of Dwelling Units Permitted Within PBD Overlay District:						**400[3]**

[1] The development potential of each parcel is capped accordingly based on a percentage of its size in relation to the overall PBD Area. Redistribution of dwelling units between each parcel up to the maximum unit range (Parcel A up to 165du; Parcel B up to 332du) may be proposed in conjunction with separate development applications unique to each parcel. However, implementation of this density transfer mechanism requires a corresponding reduction of dwelling units from the cap amount of the other parcel(s) so that the overall maximum cap of 400 dwelling units is not exceeded.

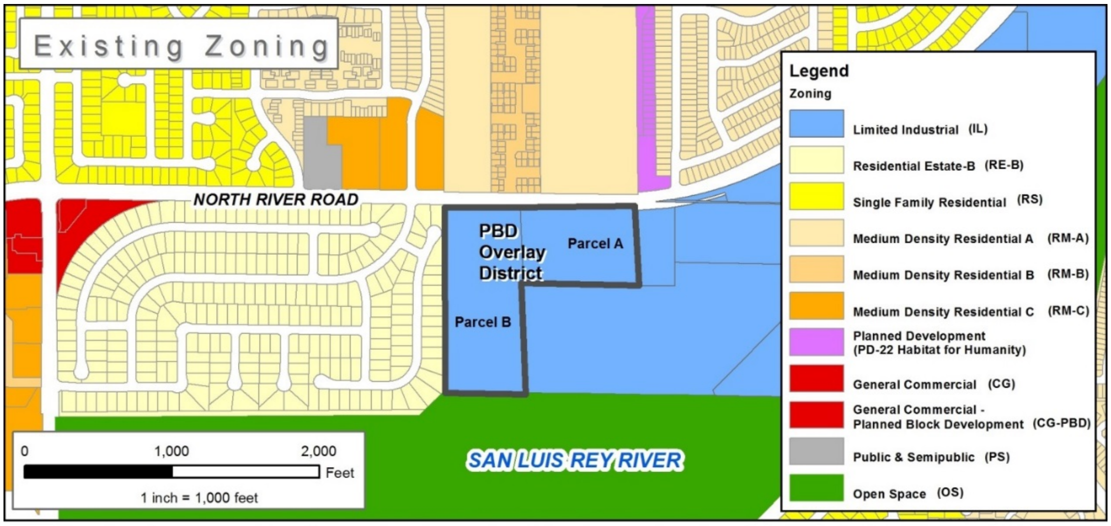
[2] Parcel A consists of a total land area of 9.7 acres; however, approximately 1.8 acres are comprised of roadway and emergency access rights-of-way. Such existing rights-of-way are defined as "Undevelopable Lands" under the City of Oceanside General Plan and Zoning Ordinance. Therefore, Parcel A contains ***7.9 Gross Developable Acres*** of land applicable to density calculations.

[3] This is the maximum overall dwelling unit amount potential. Lower unit counts and densities may be proposed with future development applications. Final development areas, gross developable acreage and dwelling unit distribution will be determined in conjunction with detailed project development plans. The maximum development potential within the PBD Overlay District will remain at 400 dwelling units.

PBD Overlay District Area
Existing and Proposed
Land Use Designations **Figure 2.1**



PBD Overlay District Area
Existing and Proposed
Zoning Designations Figure 2.2



2.2 Medium Density Residential Building Types

The medium density land use (MDC-R) and zoning (RM-C) designations proposed for the PBD Overlay District will allow for the future development of residential communities that may be achieved through a variety of site and building designs. Specific site layouts and residential product designs will ultimately be identified as part of future Development Plans proposed for the property.

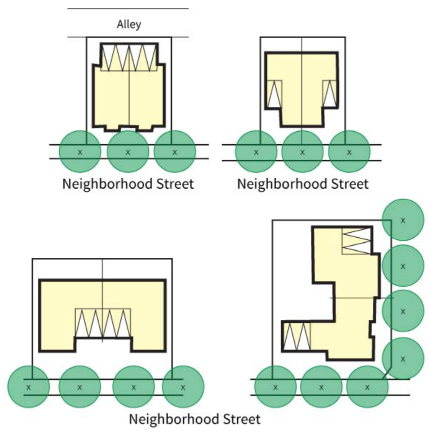
A range of housing types can be provided as part of appropriately scaled medium density developments. These residential building types may include small lot attached single-family homes, condominiums, townhomes, courtyard clusters, duplex homes and garden apartments, along with various other product configurations. Descriptions of these various attached and detached residential building types are provided on the following pages. The exhibits present typical site schematics and development characteristics for each product type. A list of the anticipated residential building types is presented in *Table 2* below.

Table 2 - Medium Density Residential Building Types

[1] Residential Building Types			Permitted in PBD Overlay
Small Lot Attached Single-Family Homes			X
Duplex Homes			X
Condominiums			X
Courtyard Clusters			X
Rowhomes			X
Garden Courts			X
Motor Courts			X
Garden Apartments			X

[1] Attached and detached medium density residential units are identified as consistent with the MDC-R land use under the City's General Plan and Zoning Ordinance. The listed building typologies are not all inclusive and variations of these residential uses may be proposed in conjunction with future Development Plans within the PBD Overlay District.

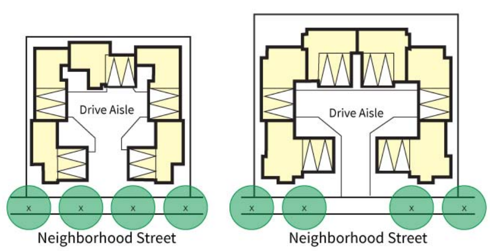
Medium Density Residential Building Types



Attached Single Family and Duplex Homes

Homes paired together with common walls and designed to "live" more like single family homes and are typically designed in 2 to 3 unit configurations. A smaller residential footprint provides space for private yards and usable outdoor areas.

Density: 7 – 12 du/ac
Height: 1 – 2 stories
Unit Size: 1,400 – 2,000 sq. ft.

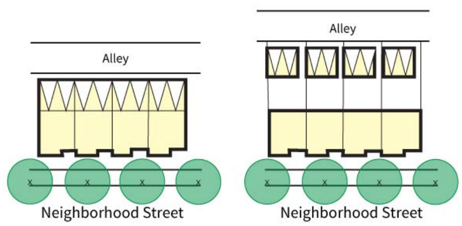


Condominiums and Courtyard Cluster Homes

Connected homes that share an auto court access and are typically grouped in configurations of 4 to 6 units. This design presents a single family streetscape aesthetic while reducing the direct exposure of street facing garages. Building configurations provide private yard and usable outdoor space.

Density: 8 – 14 du/ac
Height: 2 - 3 stories
Unit Size: 1,200 – 1,800 sq. ft.

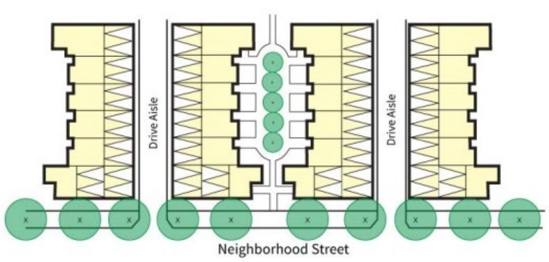
Medium Density Residential Building Types



Rowhomes

Attached townhomes featuring 2 and 3-story designs with typical configurations ranging from 3 to 6 units in size. Building designs integrated with common open space and landscape areas provide each home with well-designed living areas on upper floors, private patio and balcony areas, and dedicated garages.

Density:	**10 – 15 du/ac**
Height:	**2 - 3 stories**
Unit Size:	**1,200 – 2,100 sq. ft.**

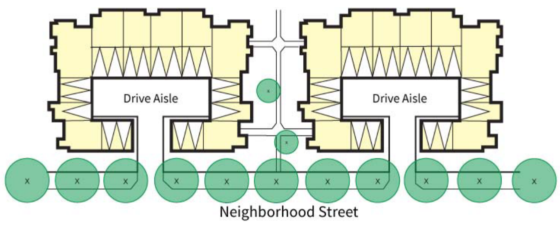


Garden Court Townhomes

Buildings are oriented to front on common open space and landscaped areas. Garages are typically rear-loaded along shared alleys. Typical 2 and 3 story building designs allow for a variety of floor plan options with attached garages. Units have front and rear exposure with patios, balconies, window and door openings.

Density:	**12 – 18 du/ac**
Height:	**2 - 3 stories**
Unit Size:	**1,200 -2,000 sq. ft.**

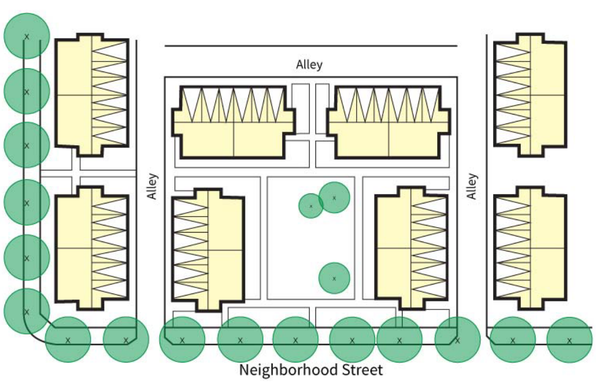
Medium Density Residential Building Types



Motor Court Condominiums / Apartments

Attached homes organized around a shared access drive with configurations of 6 to 8 units. Courtyard design minimizes building mass and produces a lower density residential appearance along street frontage. Building frontages are oriented along landscaped common areas.

Density:	**16 – 20 du/ac**
Height:	**2 - 3 stories**
Unit Size:	**1,100 -1,600 sq. ft.**



Garden Apartments

Buildings typically feature 3-story designs and stacked flat configurations and may allow for direct garage access. Design focus is on entire building and less on individual units. Living spaces are focused toward internal landscape areas and courtyards. Private open space is typically provided via balconies or patios.

Density:	**18 - 22 du/ac**
Height:	**3 stories**
Unit Size:	**850 – 1,100 sq. ft.**

Chapter 3: Project Development Regulations

3.1 Development Standards

The Development Standards presented in *Table 3* will regulate future development proposals within PBD Overlay District. The standards address development criteria including site design, open space, and parking. These regulations are further augmented by the Community Design Guidelines presented in Chapter 4.

The regulations are intended to allow flexibility for specific development proposals while providing reliable base criteria to ensure appropriate development within the PBD Overlay Area and promote the formation of well-designed medium density residential neighborhood areas.

The standards support flexibility in site design and development patterns within the PBD Overlay in an effort to create a pleasing community aesthetic and facilitate efficient use of the site. The regulations support a development pattern and scale sensitive to the varying adjacent neighborhood areas which consist of single and multi-family residential developments.

Where the Planned Block Development Plan does not address a particular development standard, the applicable standards of the Zoning Ordinance shall apply. The standards for the Medium Density Residential C (RM-C) zoning district are applicable as the proposed underlying land use is (MDC-R). If there is a discrepancy between the provisions of the Zoning Ordinance and the PBDP, the regulations set forth in the PBDP shall prevail.

Table 3 - Site Development Regulations Summary

Regulations Consistent with Current RM-C Standards in the Zoning Ordinance		
Standard[1]	**PBDP Overlay**	
Minimum Lot Area	7,500 sq. ft.	
Minimum Lot Width	60 ft.	
Maximum Site Coverage	65%	
Supplemental Development Standards As presented in the City of Oceanside Zoning Ordinance - Title 30	**Screening of Mechanical Equipment**	Per Section 3021
	Refuse Storage Areas	Per Section 3022
	Underground Utilities	Per Section 3023
	Performance Standards	Per Section 3024
	Vehicular Access	Per Section 3114
	Signs	Per Article 33
	Nonconforming Structures	Per Article 35

Regulations as Proposed for PBD Overlay District	
Standard	**PBDP Overlay**
Minimum Site Perimeter Setbacks:[2]	
From North River Road **From Calle Joven**	20 ft. 15 ft.
From Side and Rear Property Lines	10 ft. (1 story structures) 15 ft. (2nd story portion of structures) 20 ft. (3rd story portion of structures) *An additional 5 feet of setback required for structures adjacent to single-family residences.
Minimum Building Separation Distance:[3]	
Front to Front	20 ft.
Side to Side	10 ft.
Rear to Rear	10 ft.
From Internal Streets	5 ft.
All Others	10 ft.
Maximum Building Height:[4]	35 ft. (3 story maximum)
Maximum Fence & Wall Height:	6 ft for perimeter and internal project walls. 8 ft for walls along North River Road frontage.
Usable Open Space	350 sq. ft. / unit - Minimum Overall Total Design of Common and Private Usable Open Space areas shall be per the standards presented in Section 1050 (Q) (Usable Open Space) of the Zoning Ordinance.

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[1] Lot Area, Width and Site Coverage are applicable to the overall development site, not individual dwelling unit lot areas.

[2] Encroachment of up to two (2) feet may be permitted into minimum building setbacks and separation distances for architectural features, chimneys, roof overhangs, balconies, and similar features. Patio areas at grade are exempt from separation distance requirements.

[3] Building separation requirements shall be provided in conjunction with noted setback requirements and in lieu of the standards presented in Section 1050 (N) (Windows Opposite Court) of the Zoning Ordinance.

[4] Building height shall be measured from finished grade, exclusive of all architectural and structural features per section 3018 of the Zoning Ordinance 'Exceptions to Height Limits'.

3.2 Parking Standards & Transit

Off-street parking shall be incorporated with any future residential project in a manner which best serves the proposed development and use of the property. Off-site parking outside the PBD Overlay District is not permitted to meet the parking requirements established by this PBDP. Parking associated with proposed future residential development shall be provided per the standards listed in *Table 4* below.

Table 4 - Parking Standards Summary

Standard	Parking Requirements
Detached Residential	Two-car garage / unit
Attached Residential	1.5 spaces / one bedroom or studio units, which must include 1 covered space 2 spaces / two or more bedroom units, which must include 1 covered space
Guest Parking	A minimum number of spaces equal to 25% of the total number of dwelling units
Parking Space Dimensions	8.5 ft. x 18 ft. minimum (non-garage spaces)
Garage Dimensions	10 ft. wide x 19 ft. deep Minimum for one-car garages 20 ft. wide x 19 ft. deep Minimum for two-car garages
Garage Setbacks	Garage setbacks shall be measured from the back of sidewalk, curb line, or edge of access drive (whichever is least) based on building orientation. Garage setbacks from access drives shall be either: • Less than or equal to 4 feet; or • Greater than or equal to 18 feet • Parking shall not be permitted in drives less than 18 feet in length (exclusive of sidewalk and curb areas).

Specific transit options are available for future projects which may lead to reductions in vehicle trips and on-site parking demand. The site is located along a high frequency bus transit line (303 NCTD Breeze) that provides direct access to area community amenities and established transit options. The 303 line runs between the Oceanside and Vista Transit Centers with bus stops currently located adjacent to this parcel at Calle Montecito. The San Luis Rey Bus Transit Center (SLRBTC) is also located approximately (1) mile northeast of this site at the southeast corner of the intersection of North River Road and Vandegrift Boulevard. In addition to the existing high frequency local bus service, the SLRBTC and route 303 is planned for rapid bus service to be phased in by 2035.

Chapter 4: Community Design Guidelines

The following Community Design Guidelines presented for the Tierra Norte PBD Overlay District are applicable in the evaluation of future medium density residential development proposals for the property. The Guidelines are intended to be flexible in their application in order to allow for a diversity of quality project designs that are responsive to and compatible with existing surroundings. The recommendations include site planning and architectural design criteria intended to promote development of a well-planned desirable residential community. In summary these Guidelines are provided to:

- *Promote compatibility between new and existing development;*
- *Encourage new development that embodies high quality design elements and project identity;*
- *Allow for a diversity of residential designs and architectural styles;*
- *Serve as a key reference for developers, staff and City officials in the review of future development proposals within the PBD Overlay Area; and*
- *Enhance community identity through thoughtful project design.*

4.1. Community Design and Site Planning

Building Orientation

- Provide a variety of architectural styles and building configurations, such as courts and clusters, to avoid a monotonous appearance.
- Show sensitivity to adjacent properties, open space, and community amenity areas with appropriate setbacks and orientation of buildings and facades.
- Provide for a varied streetscape and community appearance.
- Neighborhood designs should blend compatible architectural styles and utilize a distinctive palette of colors and materials.
- Provide varied building setbacks along the street or articulate each building.
- Design internal streets to include landscaping and provide spaces and pedestrian amenities for social interaction such as small gathering areas, mail box clusters, benches and seating, water features, and shaded areas.
- Provide traffic calming measures such as narrower roadways, on-street parking, bump-outs, and speedbumps along internal streets.

- Design internal streets with sidewalks along a minimum of one side to promote pedestrian activity within the development.
- Minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping and slopes that impede pedestrian circulation shall be avoided.
- Orient buildings to incorporate a relationship between indoor and outdoor space.
- Provide enhanced pedestrian circulation with access and connections to internal walkways, paseos, and open space systems.
- Incorporate landscape areas to enhance the appearance of structures, define site functions of outdoor spaces, and screen undesirable views of parking areas and utilities.
- Integrate appropriate landscaping that includes a variety of trees, shrubs, and other plantings.
- Design landscaping to be compatible with building design. Use trellises, arbors, cascading landscaping, vines and perimeter garden walls where suitable.

4.2. Massing and Scale

- The scale and mass of residential structures should be compatible with the adjacent neighborhood and vary based on character, scale, and edge conditions of surrounding existing developments.
- Use varied roof forms, mass, shape, and materials to create variations in building facades.
- Articulate building walls, projections, offset wall planes and recesses to provide shadow and depth, variable rooflines, and a combination of two and three story forms.
- Create varying front setbacks, staggered roof planes, and variety in orientation for units clustered into one structure.

Variations in Massing

- Avoid large expanses of wall surface, repetition in design, or 'box-like' structures lacking horizontal and vertical articulation.
- Vary orientation of buildings to avoid monotony of facades and to minimize the length of garage door corridors.
- Provide varied setbacks between building elements (i.e. recessed or side/rear facing garages, porches, second floor elements, etc.).
- Integrate balconies, decks, and exterior stairs with building elevations to provide articulation and minimize large wall masses.
- Stagger setbacks between adjacent buildings to enhance variation and quality of streetscapes.

4.3. Roof Form


Varying roof forms

- Vary roof elements to minimize the appearance of mass and bulk of buildings.
- Second and third stories should feature off-set façade elements with a variety of roof lines pitches.
- Roof materials should be appropriate to the architectural style of the dwellings.
- Roofline design should complement variations in building massing and building articulation by featuring bays, gables, dormers and strong eave elements.
- Roof materials should consist of concrete tile, clay, composite shingles, or similar material appropriate to the architectural style of the residential building.

4.4. Building Materials and Finishes

- Use high quality, durable building materials that require low maintenance, and complement the design of the building.
- Use a combination of varied materials, textures, and colors to articulate building elements, provide greater variety visual interest within the community.
- Coordinate color palettes using subtle earth tones with accent colors that are darker or lighter to highlight the character of the structure.
- Bright colors and non-earth tones should be avoided accept as accents.
- Integrate design features, architectural detail, and articulation on side and rear facades consistent with building fronts.

Coordinated Color Palette & Materials

4.5. Garages and Accessory Buildings


Recessed garages facing interior court

- All garage and accessory structures (community buildings, pool houses, etc.) are subject to these same design guidelines and should be consistent with the architectural style and design of the primary residential buildings.
- Designs should minimize garage doors facing external streets. Side and rear facing garages should be incorporated when possible.
- Avoid long rows of garage doors within building designs and vary location of garages throughout the development area.
- Garage door design should complement the overall building architecture.
- Garage doors should be multi-paneled and recessed from framing to create visual shadow relief.

4.6. Windows and Doors


Upper story window treatment

- Windows and doors are significant building components and should be designed to add variety and visual interest to the building design.
- Recessed openings, bay windows, projections, window boxes, and balconies are encouraged where appropriate for the architectural style.
- Windows and doors should be "punched" in from the exterior building wall or should be defined by well-designed trims. Trim material should contrast with wall materials.
- Upper story windows should incorporate features such as pot shelves, shutters, grill work, stucco trim and similar details that articulate the building architecture.

4.7. Community Lighting

- Site lighting should incorporate a scale and aesthetic that best complements the residential character of the development.
- Street lighting should be utilized to the minimum extent possible to provide a safe community, but also to enhance neighborhood character. All lighting standards should be hooded and designed to prevent light spillover.

Pedestrian-Scaled Site Lighting

- Lighting along roadways should be designed to emphasize pedestrian scale and orientation.
- Ensure safe pedestrian lighting is incorporated with interior paths and community walkways.

4.8. Trash Enclosures, Mechanical Equipment and Mailboxes

- Trash and recycling enclosure screen walls shall be constructed of materials consistent with the architectural style of the residential buildings.
- Enclosures shall be screened from view of upper level residences with coverings designed to meet current stormwater requirements.

Coordinated trash enclosure design

- All utility and mechanical equipment shall be screened from view.
- Common mailbox enclosures should be incorporated into accessory structures when possible and designed with complementary forms, materials and colors.

Chapter 5: Plan Implementation

5.1 Development Review

A General Plan Amendment and Zone Amendment, in conjunction with the project Environmental Impact Report, will be considered and adopted concurrently with the Tierra Norte Planned Block Development Overlay District. Future residential development as described within this PBD Plan will require the review and approval of subsequent land use applications as required for the specific development proposal.

Implementing development proposals shall require, at a minimum, review of a Development Plan to present specific development projects within the Overlay Area and to address any necessary infrastructure or facility improvements. Specific projects shall be reviewed by the City in order to ensure consistency and substantial conformance with the development regulations and design guidelines presented in this Plan. All land use and development applications within the Overlay Area shall be reviewed according to established City of Oceanside policies and procedures.

5.2 Plan Amendments

While this document attempts to be comprehensive, not all development scenarios or future situations can be envisioned. Plan Amendments shall be considered as a mechanism to keep this Planned Block Development Plan current by providing the City and developers flexibility in responding to potential changes in future design preferences and market conditions.

Proposed modifications to the PBDP shall be initially reviewed by the City in order to determine the extent to which they differ from the established standards and regulations of the Plan. The City Planner shall consider the impact and effect of any revision and determine whether an amendment to the Plan is required. Modifications to this Plan shall be in accordance with the regulations specified in the City of Oceanside Zoning Ordinance.

APPENDIX F
AIR QUALITY ASSESSMENT

AIR QUALITY ASSESSMENT

Tierra Norte
Planned Block Development – Overlay District
City of Oceanside, CA

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October 8, 2021

Project: 15-49 Tierra Norte AQ

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EXECUTIVE SUMMARY

This air quality impact study has been completed to determine air quality impacts (if any) associated with the proposed development of a 25.6 acre Project site. The Project site consists of two separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40) located along the south side of North River Road, 0.5 miles east of Douglas Drive in the North Valley Neighborhood in the City of Oceanside. The project is proposing a Planned Block Development (PBD) Overlay District consisting of a medium density residential in-fill development with a dwelling unit 'cap' with a maximum allowance of 400 dwelling units for the entire district overlay. A range of housing types can be provided as part of appropriately scaled medium density developments and may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes, and garden apartments.

Based upon this analysis, no direct or cumulative air quality impacts are expected from construction. Therefore, mitigation measures for criteria pollutants and fugitive dust from construction are not required. It should be noted that the grading contractor will be required to follow BMPs for grading and comply with all SDAPCD rules and regulations.

A diesel particulate health risk analysis was conducted, and based on diesel exhaust emission quantities, the proposed Project would create significant diesel particulate health risk impacts during construction. As a design feature, the Project will utilize Tier IV construction equipment. Based on this, the project was found to produce a less than significant diesel particulate health risk impact.

The proposed Project was analyzed for both a winter and summer operational environment. Based on the models, the Project would not create any operation air quality impacts. Therefore, no mitigation measures will be necessary.

A localized Carbon Monoxide (CO) "Hot Spot" analysis was conducted at the identified worst-case intersection (College Drive/SR-76) identified in the Project traffic study. Using the CALINE4 source modeling software, it was determined that the proposed Project would generate a less than significant CO impact at this location. Since all other intersections had fewer trips, all intersections where Project trips are added can be considered less than significant as well as related to CO impacts.

Finally, odor impacts from construction operations would be expected though would be considered a short-term event and would not be considered a significant impact.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created by construction, area or operational emissions (short term or long term) from the proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to mitigate those impacts to the extent feasible.

1.2 Project Location

The proposed Tierra Norte Planned Block Development Overlay District includes two (2) separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of Oceanside.

Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property. A general Project vicinity map is shown in Figure 1-A.

1.3 Project Description

This proposed Project seeks a Planned Block Development Plan (PBDP) for the Overlay District. The intended purpose of the PBD Planned Block Development Overlay District (PBD Overlay District) is to permit flexibility in land-use regulation and site development standards under control of the Planning Commission and City Council where flexibility or coordinated planning for a large site or a site under multiple ownership will enhance the potential for superior urban design.

Figure 1-A: Project Vicinity Map

Source: (Google, 2020)

The PBDP establishes the land use and development standards that will regulate future residential development proposals for the property. The PBDP also presents site planning and architectural design criteria intended to promote development of a well thought-out, highly livable residential community which is compatible with the surrounding neighborhood. Detailed site layouts and residential building designs will ultimately be identified as part of future development plans specifically proposed for the property. While a comprehensive Project may be proposed for the entire Overlay Area, it is recognized that each parcel exists under separate ownership and that multiple development plans may also be considered.

The PBDP Property is currently designated as Limited Industrial (LI) by the City of Oceanside General Plan and allows a Floor Area Ratio (FAR) of 1.0 and a Max Lot Coverage of 75%. The site is 25.6 acres, but 1.8 acres are part of dedicated rights-of-way which are not included in density or site intensity calculations. So, the technical gross site area is only 23.8 acres and could accommodate a facility consisting of roughly 1,000,000 SF.

The Project proposes to establish the PBD Overlay District on this property, amend its land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

A medium-density residential use on this property would complement the existing residential uses located to the north and west while providing a transition from light industrial uses located to the east. Infill residential development represents an opportunity to repurpose this underutilized site by providing future housing opportunities for the Oceanside community.

A range of housing types can be provided as part of appropriately scaled medium density developments. These residential building types may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes and garden apartments, along with various other product configurations.

The MDC-R designation establishes a density range of 15.1 – 20.9 dwelling units per acre with a potential overall development range of between 359 and 497 dwelling units. However, this PBDP institutes a dwelling unit 'cap' with a maximum allowance of only 400 dwelling units for the entire overlay district. The proposed PBDP area is shown on Figure 1-B.

Figure 1-B: Proposed PBD Overlay District

Source: (Google Earth, 2020)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property. The surrounding North Valley Neighborhood presents a diversity of land uses situated between Camp Pendleton on the north and the San Luis Rey River on the south. The neighborhood area is home to a number of multi-family developments and single-family subdivisions ranging from just a few years to nearly 50 years old.

Neighborhood serving commercial uses are located nearby along the North River Road corridor at intersections with Douglas Drive, College Boulevard, and Vandegrift Boulevard. The North River Village mixed-use development and San Luis Rey Bus Transit Center (SLRBTC) are also located approximately within one (1) mile of the Overlay Area at the southeast corner of the North River Road and Vandegrift Boulevard intersection.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heats up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Meteorological trends within Oceanside produce daytime highs typically ranging between 65ºF in the winter to approximately 78ºF in the summer with August usually being the hottest month. Median temperatures range from approximately 55ºF in the winter to approximately 70ºF in the summer. The average humidity is approximately 64% in the winter and about 72% in the summer (City-Data, 2020).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. ***Secondary Standards*** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2*

exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.

4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.*
5. ***Ozone (O_3)****: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.*
6. ***Sulfur Dioxide (SO_2)****: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.*

2.3.2 State Standards and Definitions

CARB sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) is similar to the NAAQS and also restricts four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. ***Visibility Reducing Particles****: Particles in the Air that obstruct the visibility.*
2. ***Sulfates****: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)****: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 Parts per Million (ppm)) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride****: also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5)[9]	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm[10] (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm[10] (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[12,13]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: (California Air Resources Board, 5/4/2016)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the $PM_{2.5}$ standard and many areas are in non-attainment for PM_{10} as well. California therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed to attain ambient air quality standards.

The San Diego Air Pollution Control District (SDAPCD) is the government agency which regulates sources of air pollution within the County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_X). Currently, San Diego is in "non-attainment" status for federal and state O_3 and state PM_{10} and $PM_{2.5.}$ An attainment plan is available for O_3. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NO_X and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NO_X reduction measures. NO_X and VOCs are precursors to the formation of ozone in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status for criteria pollutants with respect to both federal and state nonattainment status by pollutants for County is shown in Table 2.2 (SDAPCD, 2019).

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the Project produces unmitigable air quality emissions or if the Project produces cumulative impacts.

Table 2.2: San Diego Air Basin Attainment Status by Pollutant

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassifiable **	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

** The federal 1-hour standard of 12 pphm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.*
*** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.*
(SDAPCD, 2019)

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act has provided a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:

A: Conflict with or obstruct implementation of the applicable air quality plan?
B: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
C: Expose sensitive receptors to substantial pollutant concentrations?
D: Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

2.5 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established threshold in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIA). These screening criteria can be used to demonstrate that a Project's total emissions would not result in a significant impact as defined by CEQA. Since SDAPCD does not have AQIA threshold for emissions of Volatile Organic Compounds (VOCs), the use of the threshold for VOCs is from the South Coast Air Quality Management District for the Coachella Valley. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the Project's total air quality impacts are below the state and federal ambient air quality standards. These screening thresholds for construction and daily operations are shown in Table 2.3.

Table 2.3: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)	Total Emissions (Tons per Year)
Construction Emissions		
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55	15
Nitrogen Oxide (NO_x)	250	40
Sulfur Oxide (SO_x)	250	40
Carbon Monoxide (CO)	550	100
Volatile Organic Compounds (VOCs)	75	40
Reactive Organic Gases (ROG) SCAQMD	75	40
Operational Emissions		
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55	15
Nitrogen Oxide (NO_x)	250	40
Sulfur Oxide (SO_x)	250	40
Carbon Monoxide (CO)	550	100
Lead and Lead Compounds	3.2	0.6
Volatile Organic Compounds (VOCs)	75	40
Reactive Organic Gases (ROG) SCAQMD	75	40

Non-Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the Project increase the cancer risk to over 10 in one million. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology. This report assumes that Volatile Organic Compounds (VOC) and Reactive Organic Gases (ROG) are essentially the same due to the fact that emissions generated from the Project represent non-methane organic compounds.

2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting monitoring data. The District operates 10 monitoring sites, which collect data on criteria pollutants. Four additional sites collect meteorological data, which is used by the District to assist with pollutant forecasting, data analysis and characterization of pollutant transport.

SDAPCD published the five-year air quality summary for all of the monitoring stations within the San Diego basin (SDAPCD, 2020). The proposed Project is closest to the Camp Pendleton Monitoring station. Table 2.4 identifies the criteria pollutants monitored at the aforementioned station.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2015	2016	2017	2018
O^3 (ppm)	Camp Pendleton Monitoring Station	1 Hour	0.09 ppm	No Standard	0.09	0.08	0.09	0.08
		8 Hour	0.070 ppm	0.070 ppm	0.08	0.07	0.08	0.07
PM_{10} (µg/m3)		24 Hour	50 µg/m3	150 µg/m3	30	-	-	N/A
		Annual Arithmetic Mean	20 µg/m3	No Standard	19.4	-	-	N/A
$PM_{2.5}$ (µg/m^3)		24 Hour	No Standard -	35 µg/m3	29.4	-	-	N/A
		Annual Arithmetic Mean	12 µg/m3	15 µg/m3	8.6	-	-	N/A
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.006	0.006	0.006	0.005
		1 Hour	0.18 ppm	0.100 ppm	0.060	0.072	0.063	0.048
CO (ppm)		1 Hour	20 ppm	35 ppm	3.1	-	-	N/A
		8 Hour	9 ppm	9 ppm	2.0	-	-	N/A
Notes: Days exceeded marked with indicate no data available								

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the Project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in ***Attachment A*** to this report.

The AERSCREEN dispersion model was used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The AERSCREEN input/output file for the proposed Project is shown in ***Attachment B***. The worst case exhaust emissions generated from the Project from construction equipment was utilized and calculated within the CalEEMod model.

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst case cancer risk dose calculation is defined in Equation 1 below (OEHHA, 2015).

Equation 1 $$Dose_{air}=C_{air}*(BR/BW)*A*EF*(1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m^3) Annual average DPM concentration in µg/m^3 - AERSCREEN predicts a 1-hr concentration and is corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
$1x10^{-6}$	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the Project models which is provided as ***Attachment C*** to this report. The worst case cancer risk calculation is defined in Equation 2 below (OEHHA, 2015).

Equation 2 $$RISKinh\text{-}res = DOSEair \times CPF \times ASF \times ED/AT \times FAH$$

RISKinh-res	=	Residential inhalation cancer risk
DOSEair	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Office of Environmental Health Hazard Assessment OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans.

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, 2015). Diesel Exhaust has a REL of 5 μg/m^3 and targets the respiratory system.

3.2 Construction Assumptions

Project construction dates were estimated based on a construction start date in 2024 with construction ending in 2026. CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 VOC paint standards and to include Tier 4 construction equipment. Table 3.1 shows the expected timeframes for the construction of all Project infrastructure, facilities, and improvements, as well as the expected number of pieces of equipment. Also, it should be noted that the below would be conservative in the event construction began/ended at a later date as annual code updates and fleet improvements typically have the effect of restricting and limiting emissions on construction equipment over time.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Demolition	1/1/2024	2/9/2024	
Concrete/Industrial Saws			1
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			2
Site Preparation	2/10/2024	3/8/2024	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	3/9/2024	5/10/2024	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Paving	5/11/2024	6/28/2024	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	7/1/2024	3/6/2026	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	11/28/2025	3/6/2026	
Air Compressors			1
This equipment list is based upon equipment inventory within CalEEMod. The quantity and types are based upon assumptions provided by the Project applicant.			

3.3 Operational Emissions

Once construction is completed the proposed Project would generate emissions from daily operations which would include sources such as Area, Energy, Mobile, Waste and Water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping and architectural coatings as part of regular maintenance. The largest energy uses would be from electricity and natural gas. Finally, mobile or transportation related emissions are calculated in CalEEMod using EMFAC 2014 rates which are built into CalEEMod. The operational model is also included in CalEEMod ***Attachment A*** at the end of this report.

In the EMFAC model, the emission rates are multiplied with vehicle activity data provided by the regional transportation agencies to calculate the statewide or regional emission inventories. An emission inventory is based on the emission rate (e.g., grams per pollutant emitted over a mile) and vehicle activity (e.g., miles driven per day). Area sources originate from daily onsite uses, which require either burning fuel to generate energy (i.e., natural gas or the evaporation of organic gases such as from paints (architectural coatings)).

The Project traffic engineer estimated that there will be 3,200 daily trips which were broken down within the Project traffic study which utilizes SANDAG Traffic Generation methodologies (LOS Engineering, Inc., 2021). Consumer product emissions are generated by a wide range of product categories, including air fresheners, automotive products, household cleaners, and personal care products. Emissions associated with these products primarily depend on the increased population associated with residential development. Default Consumer Product emission factors were used in the CalEEMod model. Architectural coatings would be compliant with San Diego's Rule 67.

3.4 Micro Scale Operational Emissions

Air pollutant emissions related to Project-generated traffic have the potential to create new, or worsen existing, localized air quality violations with respect to carbon monoxide (CO). These increased carbon monoxide "Hot Spots" are determined through the utilization of the Institute of Transportation Studies (ITS) Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis, 1997).

In the event Project traffic adds vehicular trips to an intersection that operates at Level of Service (LOS) E or F, or the addition of project trips re-classify an intersection from an acceptable LOS to LOS E or F, and when total intersection peak-hour trips exceed 3,000 vehicles, it is recommended that projects within the County of San Diego conduct a CO "Hot Spot" analysis (County of San Diego, 2007). The City of Oceanside also suggests using the County's screening thresholds to conduct CO hot spot analyses.

The ITS Transportation Project-Level Carbon Monoxide Protocol recommends running the EMFAC model to determine emission rates for the Project year as well as conduct dispersion modeling utilizing CALINE to determine worst-case emission concentrations. The EMFAC 2014 model which is consistent with CalEEMod 2016.3.2 is provided as ***Attachment D***.

The proposed Project traffic study reported that the proposed Project, combined with existing traffic, would add trips to four intersections currently experiencing LOS of E or worse although only two intersections would generate more than 3,000 vehicles per hour: (1) Shopping Center Drive/North River Road and (2) College Drive/SR-76. Both intersections have. These intersections as identified within the proposed Project traffic study are shown in Table 12 (LOS Engineering, Inc., 2021). It should be noted that the proposed Project traffic study indicated that the proposed Project would mitigate these impacts to less than significant however the LOS will remain LOS E or worse.

Table 3.2: Intersections LOS E or Worse and Delay

Intersection	Peak Hour	Number of peak-hour Vehicles	LOS
Shopping Center Drive/North River Road	AM	4094	D
	PM	4354	**E**
College Drive/SR-76	AM	6239	**E**
	PM	6976	**F**

Micro-Scale operations during these conditions show that the proposed Project would add trips to these intersections and would have a potential to generate CO emissions in excess of the CAAQS. For purposes of this analysis, the CAAQS would be considered the most stringent air quality standard with CO limits of 9 parts per million (PPM) for the one-hour standard and 20 PPM CO for the 8-hour standard and are used within this analysis. Additionally, the CALINE model incorporated the highest 8-hour and 1-hour air quality data as collected at the nearby monitoring stations identified in Table 2.4 above, which in 2015 was 2.0 PPM and 3.1 PPM, respectively. The CALINE model are shown in ***Attachment E*** to this report.

3.5 Odor Impacts

Potential onsite odor generators would only be expected during short term construction activities such as paving and possibly painting however, the odors would be considered short term and would not have a potential to create offensive odors and would therefore not be considered an impact under CEQA.

4.0 FINDINGS

4.1 Construction Findings

Construction emissions in pounds per day from the construction activities and equipment identified in Section 3.2 above is shown in Table 4.1 below. Based on these numbers, the proposed Project would not exceed City standards, and would not require mitigation. It should be noted that, as a design feature, the proposed Project construction team will utilize Tier 4 diesel construction equipment and architectural coatings would conform to SDAPCD Rule 67 as indicated by the applicant.

Table 4.1: Expected Construction Emissions Summary (lb/day)

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2024	1.26	5.94	33.43	0.06	18.21	0.10	18.28	9.97	0.10	10.03
2025	71.92	6.08	27.14	0.07	3.13	0.07	3.20	0.84	0.07	0.90
2026	71.88	5.99	26.71	0.06	3.13	0.07	3.20	0.84	0.06	0.90
Significance Threshold (lb/day)	**75**	**250**	**550**	**250**	**-**	**-**	**100**	-	-	**55**
SDAPCD Impact?	**No**	**No**	**No**	**No**	-	-	**No**	-	-	**No**

Given these findings, Project emissions would not exceed SDAPCD air quality standards during construction. No mitigation measures will be necessary. Given the proposed Project has no direct impacts. The proposed Project seeks to modify the zoning from LI which has a FAR of 1.0. Under this classification, a project as large as 1,000,000 SF could potentially be allowed under the General Plan. Construction emissions for a project of this size and magnitude would likely be higher. Given this, the proposed Project would generally be considered less intense with respect to construction air quality emissions.

4.2 Health Risk

Based upon the air quality modeling and assuming Tier 4 equipment, the worst-case onsite PM_{10} from onsite construction exhaust would cumulatively produce 0.0136 tons over the construction duration (795-calendar days) or an average of 0.000179 grams/second.

Utilizing the AERSCREEN dispersion model, we find that the peak maximum 1-hr concentration is 0.235 µg/m^3 during the worst-case construction period. Converting the peak 1-hr concentration to an annual concentration by multiplying it by 0.08 (US EPA, 1992) yields an annual concentration of 0.0188 μg/m^3. Therefore, utilizing the risk equation identified above in Section 3.1, the worst case inhalation cancer risk is 7.07 per million exposed at 225 meters from the geometric centroid of the Project. It should be noted again that a Project design feature would be to utilize Tier 4 diesel and would therefore be a condition to the proposed Project. Given this, the construction scenario analyzed would be considered less than significant under CEQA and would be in compliance with the City's thresholds.

There are known acute and chronic health risks associated with diesel exhaust which are considered non-cancer risks. These risks are calculated based on methods identified in Section 3.1 of this report. From this we find that the hourly concentration of 0.235 μg/m^3 divided by the REL of 5 μg/m^3 yields a Health Hazard Index of 0.05, which is less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

Furthermore, based on review of the Project traffic study, the two closest large cumulative projects with respect to the Tierra Norte Residential Project are the 1.) Villa Storia Residential project which would construct 420 homes and 2.) North River Farms Mixed Use project would construct up to 689 homes, 25,000 SF of commercial as well as a car wash and fast food establishment.

The Project health risk screening model predicted that diesel exhaust during construction would produce the highest concentrations roughly 225 meters (0.14 miles) from the Project centroid the chances for cumulative overlap could only be expected if a nearby project being constructed simultaneously produced air quality emissions that incrementally contribute to the proposed Project air quality emissions. The nearest projects are located at least one mile away which is far enough that these projects would not increase construction emissions beyond what is calculated within this analysis. Based on this a less than significant cumulative construction impact is expected.

4.3 Operational Findings

The proposed Project could add as many as 3,200 trips per day with an average trip distance of 5.33 miles. The CALEEMOD 2016.3.2 Model was run for both the winter and summer scenarios assuming average winter and summer temperatures.

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles traveled and the expected emissions inventory calculated by CALEEMOD 2016.3.2. Based upon these calculations, no operational impacts are expected. The daily operational pollutants calculated are shown in Table 4.2.

Table 4.2: Expected Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer Scenario						
Area Source Emission Estimates (Lb/Day)	11.70	7.02	35.79	0.04	0.72	0.72
Energy Emission Estimates (Lb/Day)	0.17	1.45	0.62	0.01	0.12	0.12
Mobile Emission Estimates (Lb/Day)	3.52	12.97	33.48	0.12	11.78	3.21
Total (Lb/Day)	**15.39**	**21.44**	**69.89**	**0.18**	**12.62**	**4.05**
City Screening Level Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Winter Scenario						
Area Source Emission Estimates (Lb/Day)	11.70	7.02	35.79	0.04	0.72	0.72
Energy Emission Estimates (Lb/Day)	0.17	1.45	0.62	0.01	0.12	0.12
Mobile Emission Estimates (Lb/Day)	3.39	13.17	33.73	0.12	11.78	3.21
Total (Lb/Day)	**15.26**	**21.64**	**70.14**	**0.17**	**12.62**	**4.05**
City Screening Level Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

4.4 Micro-Scale Operational Findings

The proposed Project traffic impact study reported that the proposed Project would add Project related traffic to two intersections operating at LOS E or worse which have more than 3,000 peak hour vehicles during cumulative buildout of the area. Based on review of the data in Table 3.2 above, the worst-case intersection or the intersection having the most vehicles (College Drive & SR-76) is expected to operation with over 6,000 vehicles during the AM and PM peak-hours.

The CALINE4 model was set up to show a typical intersection with a North, East, South and West segment extending a typical 50-meters in every direction. Peak-Hour volumes were taken from the peak-hour turning movements within the proposed Project traffic impact study (LOS Engineering, Inc., 2021) for the worst-case intersection identified and CALINE4 was accordingly updated. Sensitive receptors were assumed to be roughly 25-feet to each roadway, which represents a worst-case environment.

Table 4.4 identifies both the 1-hour emission concentration predictions and the 8-hour average after utilizing the carbon dioxide persistence factor of 0.7. Based on model output results, the CO impacts at this intersection would be less than significant. Based on this calculation, since all other remaining intersections have lower traffic volumes, we can conclude that all other remaining intersections would also have a less than significant impact.

Table 4.3: Expected Carbon Monoxide Hot Spot Concentration Levels

Intersection	Vehicles Per Hour	Predicted Concentration PPM	
	PM	1 HR	8HR
College Drive/SR-76 AM	6239	0.1	0.07
College Drive/SR-76 PM	6976	0.1	0.07
CAAQS - Significant Thresholds?		20	9
Significant		**No**	**No**
Emission levels taken from EMFAC 2014 Traffic Volumes obtained from Project Traffic Study (LOS Engineering, Inc., 2021)			

4.5 Odor Impact Findings

Odor impacts from construction operations would be considered short term and would not be considered an impact.

4.6 Summary of Findings

Based upon findings in this report, no construction impacts are expected assuming the Project utilizes diesel construction equipment fitted with diesel particulate filters, catalytic converters and or selective catalytic reduction technology to conform to T-BACT requirements. Furthermore, no operational impacts are expected and no mitigation requirements will be necessary.

5.0 REFERENCES

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6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the proposed Tierra Norte project. This report was prepared utilizing the latest emission rates and reduction methodologies.

DRAFT

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Jeremy Louden, Principal — Date October 8, 2021

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ATTACHMENT A

CALEEMOD 2016.3.2 – Summer, Winter, Annual

Tierra Norte PBD Overlay District

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	400.00	Dwelling Unit	25.60	400,000.00	1144

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.6 **Precipitation Freq (Days)** 40

Climate Zone 13 **Operational Year** 2026

Utility Company San Diego Gas & Electric

CO2 Intensity (lb/MWhr) 408.95 **CH4 Intensity (lb/MWhr)** 0.017 **N2O Intensity (lb/MWhr)** 0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2026

Land Use - Site Acreage

Construction Phase - CS

Demolition -

Architectural Coating - Rule 67 Paint

Vehicle Trips - ADT per Traffic Study...Trip Length per EMFAC 2014 model run for the County of San Diego for 2026

Woodstoves - Natural Gas Fireplace for 400 units

Area Coating - Rule 67 Psint

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	71.00
tblFireplaces	NumberGas	220.00	400.00
tblFireplaces	NumberNoFireplace	40.00	0.00

tblFireplaces	NumberWood	140.00	0.00
tblLandUse	LotAcreage	25.00	25.60
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.017
tblProjectCharacteristics	CO2IntensityFactor	720.49	408.95
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	HO_TL	7.50	5.33
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TL	7.30	5.33
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.33
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	5.67	8.00
tblVehicleTrips	SU_TR	4.84	8.00
tblVehicleTrips	WD_TR	5.81	8.00
tblWoodstoves	NumberCatalytic	20.00	0.00
tblWoodstoves	NumberNoncatalytic	20.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	3.2770	32.4113	28.1512	0.0635	18.2141	1.3365	19.4444	9.9699	1.2296	11.1018	0.0000	6,154.7161	6,154.7161	1.9473	0.0000	6,203.3976
2025	73.1006	17.3287	25.7366	0.0651	3.1334	0.6009	3.7343	0.8377	0.5680	1.4057	0.0000	6,438.8809	6,438.8809	0.7513	0.0000	6,457.6646
2026	73.0573	17.2456	25.3119	0.0641	3.1334	0.6002	3.7336	0.8377	0.5674	1.4051	0.0000	6,343.8092	6,343.8092	0.7467	0.0000	6,362.4772
Maximum	**73.1006**	**32.4113**	**28.1512**	**0.0651**	**18.2141**	**1.3365**	**19.4444**	**9.9699**	**1.2296**	**11.1018**	**0.0000**	**6,438.8809**	**6,438.8809**	**1.9473**	**0.0000**	**6,457.6646**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.2647	5.9414	33.4276	0.0635	18.2141	0.1026	18.2772	9.9699	0.1025	10.0329	0.0000	6,154.7161	6,154.7161	1.9473	0.0000	6,203.3976
2025	71.9199	6.0770	27.1354	0.0651	3.1334	0.0666	3.2000	0.8377	0.0650	0.9027	0.0000	6,438.8809	6,438.8809	0.7513	0.0000	6,457.6646
2026	71.8766	5.9939	26.7108	0.0641	3.1334	0.0659	3.1993	0.8377	0.0644	0.9021	0.0000	6,343.8092	6,343.8092	0.7467	0.0000	6,362.4772
Maximum	**71.9199**	**6.0770**	**33.4276**	**0.0651**	**18.2141**	**0.1026**	**18.2772**	**9.9699**	**0.1025**	**10.0329**	**0.0000**	**6,438.8809**	**6,438.8809**	**1.9473**	**0.0000**	**6,457.6646**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	2.93	73.11	-10.19	0.00	0.00	90.73	8.31	0.00	90.20	14.91	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Energy	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Mobile	3.5225	12.9702	33.4829	0.1218	11.6867	0.0937	11.7804	3.1226	0.0871	3.2097		12,450.8335	12,450.8335	0.6238		12,466.4273
Total	**15.3903**	**21.4378**	**69.8938**	**0.1752**	**11.6867**	**0.9305**	**12.6173**	**3.1226**	**0.9239**	**4.0466**	**0.0000**	**22,835.1988**	**22,835.1988**	**0.8786**	**0.1893**	**22,913.5711**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Energy	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Mobile	3.5225	12.9702	33.4829	0.1218	11.6867	0.0937	11.7804	3.1226	0.0871	3.2097		12,450.8335	12,450.8335	0.6238		12,466.4273
Total	**15.3903**	**21.4378**	**69.8938**	**0.1752**	**11.6867**	**0.9305**	**12.6173**	**3.1226**	**0.9239**	**4.0466**	**0.0000**	**22,835.1988**	**22,835.1988**	**0.8786**	**0.1893**	**22,913.5711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	2/9/2024	5	30	
2	Site Preparation	Site Preparation	2/10/2024	3/8/2024	5	20	
3	Grading	Grading	3/9/2024	5/10/2024	5	45	
4	Paving	Paving	5/11/2024	6/28/2024	5	35	
5	Building Construction	Building Construction	7/1/2024	3/6/2026	5	440	
6	Architectural Coating	Architectural Coating	11/28/2025	3/6/2026	5	71	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 810,000; Residential Outdoor: 270,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	288.00	43.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	2.2437	20.8781	19.7073	0.0388		0.9602	0.9602		0.8922	0.8922		3,747.4228	3,747.4228	1.0485		3,773.6345
Total	**2.2437**	**20.8781**	**19.7073**	**0.0388**	**1.9933**	**0.9602**	**2.9534**	**0.3019**	**0.8922**	**1.1940**		**3,747.4228**	**3,747.4228**	**1.0485**		**3,773.6345**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0446	1.4347	0.5396	6.5900e-003	0.1590	2.6600e-003	0.1617	0.0436	2.5500e-003	0.0461		728.6308	728.6308	0.0647		730.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0258	0.3213	1.0900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.7256	108.7256	2.6900e-003		108.7928
Total	**0.0887**	**1.4605**	**0.8609**	**7.6800e-003**	**0.2822**	**3.4600e-003**	**0.2857**	**0.0763**	**3.2900e-003**	**0.0796**		**837.3563**	**837.3563**	**0.0674**		**839.0422**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.4228	3,747.4228	1.0485		3,773.6345
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**1.9933**	**0.0616**	**2.0549**	**0.3019**	**0.0616**	**0.3635**	**0.0000**	**3,747.4228**	**3,747.4228**	**1.0485**		**3,773.6345**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0446	1.4347	0.5396	6.5900e-003	0.1590	2.6600e-003	0.1617	0.0436	2.5500e-003	0.0461		728.6308	728.6308	0.0647		730.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0258	0.3213	1.0900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.7256	108.7256	2.6900e-003		108.7928
Total	**0.0887**	**1.4605**	**0.8609**	**7.6800e-003**	**0.2822**	**3.4600e-003**	**0.2857**	**0.0763**	**3.2900e-003**	**0.0796**		**837.3563**	**837.3563**	**0.0674**		**839.0422**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**18.0663**	**1.2294**	**19.2956**	**9.9307**	**1.1310**	**11.0617**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0529	0.0309	0.3856	1.3100e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		130.4707	130.4707	3.2300e-003		130.5514
Total	**0.0529**	**0.0309**	**0.3856**	**1.3100e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**130.4707**	**130.4707**	**3.2300e-003**		**130.5514**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0381		0.0621	0.0621		0.0621	0.0621	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**0.4656**	**2.0175**	**20.8690**	**0.0381**	**18.0663**	**0.0621**	**18.1283**	**9.9307**	**0.0621**	**9.9928**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0529	0.0309	0.3856	1.3100e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		130.4707	130.4707	3.2300e-003		130.5514
Total	**0.0529**	**0.0309**	**0.3856**	**1.3100e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**130.4707**	**130.4707**	**3.2300e-003**		**130.5514**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**8.6733**	**1.3354**	**10.0087**	**3.5965**	**1.2286**	**4.8251**		**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0588	0.0343	0.4284	1.4500e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		144.9674	144.9674	3.5900e-003		145.0571
Total	**0.0588**	**0.0343**	**0.4284**	**1.4500e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**144.9674**	**144.9674**	**3.5900e-003**		**145.0571**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**8.6733**	**0.1015**	**8.7749**	**3.5965**	**0.1015**	**3.6980**	**0.0000**	**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0588	0.0343	0.4284	1.4500e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		144.9674	144.9674	3.5900e-003		145.0571
Total	**0.0588**	**0.0343**	**0.4284**	**1.4500e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**144.9674**	**144.9674**	**3.5900e-003**		**145.0571**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0258	0.3213	1.0900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.7256	108.7256	2.6900e-003		108.7928
Total	**0.0441**	**0.0258**	**0.3213**	**1.0900e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.7256**	**108.7256**	**2.6900e-003**		**108.7928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0441	0.0258	0.3213	1.0900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.7256	108.7256	2.6900e-003		108.7928
Total	**0.0441**	**0.0258**	**0.3213**	**1.0900e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.7256**	**108.7256**	**2.6900e-003**		**108.7928**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0899	3.2122	0.9379	0.0111	0.2911	3.7500e-003	0.2948	0.0838	3.5800e-003	0.0874		1,201.8829	1,201.8829	0.0785		1,203.8461
Worker	0.8470	0.4944	6.1692	0.0209	2.3659	0.0154	2.3812	0.6275	0.0142	0.6417		2,087.5309	2,087.5309	0.0516		2,088.8219
Total	**0.9369**	**3.7067**	**7.1071**	**0.0321**	**2.6569**	**0.0191**	**2.6761**	**0.7113**	**0.0177**	**0.7291**		**3,289.4137**	**3,289.4137**	**0.1302**		**3,292.6680**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0899	3.2122	0.9379	0.0111	0.2911	3.7500e-003	0.2948	0.0838	3.5800e-003	0.0874		1,201.8829	1,201.8829	0.0785		1,203.8461
Worker	0.8470	0.4944	6.1692	0.0209	2.3659	0.0154	2.3812	0.6275	0.0142	0.6417		2,087.5309	2,087.5309	0.0516		2,088.8219
Total	**0.9369**	**3.7067**	**7.1071**	**0.0321**	**2.6569**	**0.0191**	**2.6761**	**0.7113**	**0.0177**	**0.7291**		**3,289.4137**	**3,289.4137**	**0.1302**		**3,292.6680**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0873	3.1658	0.9196	0.0110	0.2911	3.6400e-003	0.2947	0.0838	3.4800e-003	0.0873		1,194.4883	1,194.4883	0.0778		1,196.4321
Worker	0.8081	0.4559	5.7627	0.0201	2.3659	0.0151	2.3810	0.6275	0.0139	0.6415		2,003.0735	2,003.0735	0.0477		2,004.2657
Total	**0.8954**	**3.6217**	**6.6822**	**0.0311**	**2.6569**	**0.0188**	**2.6757**	**0.7113**	**0.0174**	**0.7288**		**3,197.5618**	**3,197.5618**	**0.1254**		**3,200.6978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0873	3.1658	0.9196	0.0110	0.2911	3.6400e-003	0.2947	0.0838	3.4800e-003	0.0873		1,194.4883	1,194.4883	0.0778		1,196.4321
Worker	0.8081	0.4559	5.7627	0.0201	2.3659	0.0151	2.3810	0.6275	0.0139	0.6415		2,003.0735	2,003.0735	0.0477		2,004.2657
Total	**0.8954**	**3.6217**	**6.6822**	**0.0311**	**2.6569**	**0.0188**	**2.6757**	**0.7113**	**0.0174**	**0.7288**		**3,197.5618**	**3,197.5618**	**0.1254**		**3,200.6978**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0851	3.1209	0.9069	0.0110	0.2911	3.5400e-003	0.2946	0.0838	3.3800e-003	0.0872		1,187.5681	1,187.5681	0.0770		1,189.4932
Worker	0.7739	0.4241	5.4197	0.0194	2.3659	0.0147	2.3805	0.6275	0.0135	0.6410		1,929.6988	1,929.6988	0.0445		1,930.8103
Total	**0.8590**	**3.5450**	**6.3266**	**0.0303**	**2.6569**	**0.0182**	**2.6752**	**0.7113**	**0.0169**	**0.7282**		**3,117.2669**	**3,117.2669**	**0.1215**		**3,120.3035**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0851	3.1209	0.9069	0.0110	0.2911	3.5400e-003	0.2946	0.0838	3.3800e-003	0.0872		1,187.568 1	1,187.568 1	0.0770		1,189.493 2
Worker	0.7739	0.4241	5.4197	0.0194	2.3659	0.0147	2.3805	0.6275	0.0135	0.6410		1,929.698 8	1,929.698 8	0.0445		1,930.810 3
Total	**0.8590**	**3.5450**	**6.3266**	**0.0303**	**2.6569**	**0.0182**	**2.6752**	**0.7113**	**0.0169**	**0.7282**		**3,117.266 9**	**3,117.266 9**	**0.1215**		**3,120.303 5**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**70.6751**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1627	0.0918	1.1605	4.0500e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		403.3967	403.3967	9.6000e-003		403.6369
Total	**0.1627**	**0.0918**	**1.1605**	**4.0500e-003**	**0.4765**	**3.0500e-003**	**0.4795**	**0.1264**	**2.8100e-003**	**0.1292**		**403.3967**	**403.3967**	**9.6000e-003**		**403.6369**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**70.5339**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1627	0.0918	1.1605	4.0500e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		403.3967	403.3967	9.6000e-003		403.6369
Total	**0.1627**	**0.0918**	**1.1605**	**4.0500e-003**	**0.4765**	**3.0500e-003**	**0.4795**	**0.1264**	**2.8100e-003**	**0.1292**		**403.3967**	**403.3967**	**9.6000e-003**		**403.6369**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**70.6751**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1559	0.0854	1.0915	3.9000e-003	0.4765	2.9600e-003	0.4794	0.1264	2.7200e-003	0.1291		388.6199	388.6199	8.9500e-003		388.8437
Total	**0.1559**	**0.0854**	**1.0915**	**3.9000e-003**	**0.4765**	**2.9600e-003**	**0.4794**	**0.1264**	**2.7200e-003**	**0.1291**		**388.6199**	**388.6199**	**8.9500e-003**		**388.8437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**70.5339**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1559	0.0854	1.0915	3.9000e-003	0.4765	2.9600e-003	0.4794	0.1264	2.7200e-003	0.1291		388.6199	388.6199	8.9500e-003		388.8437
Total	**0.1559**	**0.0854**	**1.0915**	**3.9000e-003**	**0.4765**	**2.9600e-003**	**0.4794**	**0.1264**	**2.7200e-003**	**0.1291**		**388.6199**	**388.6199**	**8.9500e-003**		**388.8437**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.5225	12.9702	33.4829	0.1218	11.6867	0.0937	11.7804	3.1226	0.0871	3.2097		12,450.8335	12,450.8335	0.6238		12,466.4273
Unmitigated	3.5225	12.9702	33.4829	0.1218	11.6867	0.0937	11.7804	3.1226	0.0871	3.2097		12,450.8335	12,450.8335	0.6238		12,466.4273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	3,200.00	3,200.00	3200.00	5,513,435	5,513,435
Total	3,200.00	3,200.00	3,200.00	5,513,435	5,513,435

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	5.33	5.33	5.33	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.611343	0.038414	0.178161	0.100214	0.013382	0.005338	0.017151	0.024839	0.001931	0.001783	0.005765	0.000770	0.000908

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
NaturalGas Unmitigated	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	15762	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Total		**0.1700**	**1.4526**	**0.6181**	**9.2700e-003**		**0.1174**	**0.1174**		**0.1174**	**0.1174**		**1,854.3562**	**1,854.3562**	**0.0355**	**0.0340**	**1,865.3757**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	15.762	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Total		**0.1700**	**1.4526**	**0.6181**	**9.2700e-003**		**0.1174**	**0.1174**		**0.1174**	**0.1174**		**1,854.3562**	**1,854.3562**	**0.0355**	**0.0340**	**1,865.3757**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Unmitigated	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.5600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7765	6.6353	2.8235	0.0424		0.5365	0.5365		0.5365	0.5365	0.0000	8,470.5882	8,470.5882	0.1624	0.1553	8,520.9247
Landscaping	0.9899	0.3798	32.9692	1.7400e-003		0.1829	0.1829		0.1829	0.1829		59.4209	59.4209	0.0569		60.8435
Total	**11.6978**	**7.0151**	**35.7928**	**0.0441**		**0.7194**	**0.7194**		**0.7194**	**0.7194**	**0.0000**	**8,530.0092**	**8,530.0092**	**0.2193**	**0.1553**	**8,581.7682**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.5600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7765	6.6353	2.8235	0.0424		0.5365	0.5365		0.5365	0.5365	0.0000	8,470.588 2	8,470.588 2	0.1624	0.1553	8,520.924 7
Landscaping	0.9899	0.3798	32.9692	1.7400e-003		0.1829	0.1829		0.1829	0.1829		59.4209	59.4209	0.0569		60.8435
Total	**11.6978**	**7.0151**	**35.7928**	**0.0441**		**0.7194**	**0.7194**		**0.7194**	**0.7194**	**0.0000**	**8,530.009 2**	**8,530.009 2**	**0.2193**	**0.1553**	**8,581.768 2**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Tierra Norte PBD Overlay District

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	400.00	Dwelling Unit	25.60	400,000.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2026
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	408.95	**CH4 Intensity (lb/MWhr)**	0.017	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2026

Land Use - Site Acreage

Construction Phase - CS

Demolition -

Architectural Coating - Rule 67 Paint

Vehicle Trips - ADT per Traffic Study...Trip Length per EMFAC 2014 model run for the County of San Diego for 2026

Woodstoves - Natural Gas Fireplace for 400 units

Area Coating - Rule 67 Psint

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	71.00
tblFireplaces	NumberGas	220.00	400.00
tblFireplaces	NumberNoFireplace	40.00	0.00

tblFireplaces	NumberWood	140.00	0.00
tblLandUse	LotAcreage	25.00	25.60
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.017
tblProjectCharacteristics	CO2IntensityFactor	720.49	408.95
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	HO_TL	7.50	5.33
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TL	7.30	5.33
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.33
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	5.67	8.00
tblVehicleTrips	SU_TR	4.84	8.00
tblVehicleTrips	WD_TR	5.81	8.00
tblWoodstoves	NumberCatalytic	20.00	0.00
tblWoodstoves	NumberNoncatalytic	20.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	3.2854	32.4155	28.1232	0.0634	18.2141	1.3365	19.4444	9.9699	1.2296	11.1018	0.0000	6,145.8511	6,145.8511	1.9471	0.0000	6,194.5273
2025	73.2476	17.3810	25.3646	0.0633	3.1334	0.6011	3.7345	0.8377	0.5682	1.4059	0.0000	6,261.4461	6,261.4461	0.7519	0.0000	6,280.2436
2026	73.2012	17.2932	24.9585	0.0624	3.1334	0.6004	3.7338	0.8377	0.5675	1.4052	0.0000	6,172.1546	6,172.1546	0.7473	0.0000	6,190.8368
Maximum	**73.2476**	**32.4155**	**28.1232**	**0.0634**	**18.2141**	**1.3365**	**19.4444**	**9.9699**	**1.2296**	**11.1018**	**0.0000**	**6,261.4461**	**6,261.4461**	**1.9471**	**0.0000**	**6,280.2436**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.3912	5.9871	33.3995	0.0634	18.2141	0.1026	18.2772	9.9699	0.1025	10.0329	0.0000	6,145.8511	6,145.8511	1.9471	0.0000	6,194.5273
2025	72.0669	6.1293	26.7634	0.0633	3.1334	0.0668	3.2002	0.8377	0.0651	0.9028	0.0000	6,261.4461	6,261.4461	0.7519	0.0000	6,280.2436
2026	72.0205	6.0415	26.3574	0.0624	3.1334	0.0661	3.1995	0.8377	0.0645	0.9022	0.0000	6,172.1546	6,172.1546	0.7473	0.0000	6,190.8368
Maximum	**72.0669**	**6.1293**	**33.3995**	**0.0634**	**18.2141**	**0.1026**	**18.2772**	**9.9699**	**0.1025**	**10.0329**	**0.0000**	**6,261.4461**	**6,261.4461**	**1.9471**	**0.0000**	**6,280.2436**

Tierra Norte PBD Overlay District - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	2.84	72.93	-10.29	0.00	0.00	90.72	8.31	0.00	90.18	14.91	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Energy	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Mobile	3.3913	13.1707	33.7273	0.1155	11.6867	0.0942	11.7809	3.1226	0.0876	3.2102		11,806.6085	11,806.6085	0.6346		11,822.4732
Total	**15.2591**	**21.6384**	**70.1381**	**0.1689**	**11.6867**	**0.9311**	**12.6178**	**3.1226**	**0.9244**	**4.0471**	**0.0000**	**22,190.9738**	**22,190.9738**	**0.8894**	**0.1893**	**22,269.6170**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Energy	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Mobile	3.3913	13.1707	33.7273	0.1155	11.6867	0.0942	11.7809	3.1226	0.0876	3.2102		11,806.6085	11,806.6085	0.6346		11,822.4732
Total	**15.2591**	**21.6384**	**70.1381**	**0.1689**	**11.6867**	**0.9311**	**12.6178**	**3.1226**	**0.9244**	**4.0471**	**0.0000**	**22,190.9738**	**22,190.9738**	**0.8894**	**0.1893**	**22,269.6170**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	2/9/2024	5	30	
2	Site Preparation	Site Preparation	2/10/2024	3/8/2024	5	20	
3	Grading	Grading	3/9/2024	5/10/2024	5	45	
4	Paving	Paving	5/11/2024	6/28/2024	5	35	
5	Building Construction	Building Construction	7/1/2024	3/6/2026	5	440	
6	Architectural Coating	Architectural Coating	11/28/2025	3/6/2026	5	71	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 810,000; Residential Outdoor: 270,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	288.00	43.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	2.2437	20.8781	19.7073	0.0388		0.9602	0.9602		0.8922	0.8922		3,747.422 8	3,747.422 8	1.0485		3,773.634 5
Total	**2.2437**	**20.8781**	**19.7073**	**0.0388**	**1.9933**	**0.9602**	**2.9534**	**0.3019**	**0.8922**	**1.1940**		**3,747.422 8**	**3,747.422 8**	**1.0485**		**3,773.634 5**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0458	1.4399	0.5635	6.4700e-003	0.1590	2.7400e-003	0.1618	0.0436	2.6200e-003	0.0462		716.0260	716.0260	0.0664		717.6859
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0963**	**1.4688**	**0.8637**	**7.4900e-003**	**0.2822**	**3.5400e-003**	**0.2858**	**0.0763**	**3.3600e-003**	**0.0796**		**818.1028**	**818.1028**	**0.0689**		**819.8260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.4228	3,747.4228	1.0485		3,773.6345
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**1.9933**	**0.0616**	**2.0549**	**0.3019**	**0.0616**	**0.3635**	**0.0000**	**3,747.4228**	**3,747.4228**	**1.0485**		**3,773.6345**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0458	1.4399	0.5635	6.4700e-003	0.1590	2.7400e-003	0.1618	0.0436	2.6200e-003	0.0462		716.0260	716.0260	0.0664		717.6859
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0963**	**1.4688**	**0.8637**	**7.4900e-003**	**0.2822**	**3.5400e-003**	**0.2858**	**0.0763**	**3.3600e-003**	**0.0796**		**818.1028**	**818.1028**	**0.0689**		**819.8260**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**18.0663**	**1.2294**	**19.2956**	**9.9307**	**1.1310**	**11.0617**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0347	0.3603	1.2300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		122.4922	122.4922	3.0400e-003		122.5681
Total	**0.0605**	**0.0347**	**0.3603**	**1.2300e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**122.4922**	**122.4922**	**3.0400e-003**		**122.5681**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0381		0.0621	0.0621		0.0621	0.0621	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**0.4656**	**2.0175**	**20.8690**	**0.0381**	**18.0663**	**0.0621**	**18.1283**	**9.9307**	**0.0621**	**9.9928**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0347	0.3603	1.2300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		122.4922	122.4922	3.0400e-003		122.5681
Total	**0.0605**	**0.0347**	**0.3603**	**1.2300e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**122.4922**	**122.4922**	**3.0400e-003**		**122.5681**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**8.6733**	**1.3354**	**10.0087**	**3.5965**	**1.2286**	**4.8251**		**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0673	0.0385	0.4004	1.3600e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		136.1024	136.1024	3.3800e-003		136.1868
Total	**0.0673**	**0.0385**	**0.4004**	**1.3600e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**136.1024**	**136.1024**	**3.3800e-003**		**136.1868**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**8.6733**	**0.1015**	**8.7749**	**3.5965**	**0.1015**	**3.6980**	**0.0000**	**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0673	0.0385	0.4004	1.3600e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		136.1024	136.1024	3.3800e-003		136.1868
Total	**0.0673**	**0.0385**	**0.4004**	**1.3600e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**136.1024**	**136.1024**	**3.3800e-003**		**136.1868**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0504**	**0.0289**	**0.3003**	**1.0200e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**102.0768**	**102.0768**	**2.5300e-003**		**102.1401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0504**	**0.0289**	**0.3003**	**1.0200e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**102.0768**	**102.0768**	**2.5300e-003**		**102.1401**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0949	3.1979	1.0288	0.0108	0.2911	3.9300e-003	0.2950	0.0838	3.7600e-003	0.0876		1,171.1346	1,171.1346	0.0827		1,173.2017
Worker	0.9685	0.5545	5.7652	0.0197	2.3659	0.0154	2.3812	0.6275	0.0142	0.6417		1,959.8744	1,959.8744	0.0486		1,961.0895
Total	**1.0634**	**3.7524**	**6.7941**	**0.0305**	**2.6569**	**0.0193**	**2.6763**	**0.7113**	**0.0179**	**0.7293**		**3,131.0089**	**3,131.0089**	**0.1313**		**3,134.2912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0949	3.1979	1.0288	0.0108	0.2911	3.9300e-003	0.2950	0.0838	3.7600e-003	0.0876		1,171.1346	1,171.1346	0.0827		1,173.2017
Worker	0.9685	0.5545	5.7652	0.0197	2.3659	0.0154	2.3812	0.6275	0.0142	0.6417		1,959.8744	1,959.8744	0.0486		1,961.0895
Total	**1.0634**	**3.7524**	**6.7941**	**0.0305**	**2.6569**	**0.0193**	**2.6763**	**0.7113**	**0.0179**	**0.7293**		**3,131.0089**	**3,131.0089**	**0.1313**		**3,134.2912**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0921	3.1516	1.0078	0.0108	0.2911	3.8100e-003	0.2949	0.0838	3.6400e-003	0.0874		1,164.1247	1,164.1247	0.0817		1,166.1678
Worker	0.9265	0.5112	5.3796	0.0189	2.3659	0.0151	2.3810	0.6275	0.0139	0.6415		1,880.6558	1,880.6558	0.0449		1,881.7769
Total	**1.0186**	**3.6629**	**6.3874**	**0.0296**	**2.6569**	**0.0190**	**2.6759**	**0.7113**	**0.0176**	**0.7289**		**3,044.7805**	**3,044.7805**	**0.1266**		**3,047.9447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0921	3.1516	1.0078	0.0108	0.2911	3.8100e-003	0.2949	0.0838	3.6400e-003	0.0874		1,164.1247	1,164.1247	0.0817		1,166.1678
Worker	0.9265	0.5112	5.3796	0.0189	2.3659	0.0151	2.3810	0.6275	0.0139	0.6415		1,880.6558	1,880.6558	0.0449		1,881.7769
Total	**1.0186**	**3.6629**	**6.3874**	**0.0296**	**2.6569**	**0.0190**	**2.6759**	**0.7113**	**0.0176**	**0.7289**		**3,044.7805**	**3,044.7805**	**0.1266**		**3,047.9447**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0897	3.1068	0.9930	0.0107	0.2911	3.6800e-003	0.2948	0.0838	3.5200e-003	0.0873		1,157.5749	1,157.5749	0.0808		1,159.5951
Worker	0.8899	0.4755	5.0539	0.0182	2.3659	0.0147	2.3805	0.6275	0.0135	0.6410		1,811.7841	1,811.7841	0.0418		1,812.8283
Total	**0.9795**	**3.5823**	**6.0469**	**0.0289**	**2.6569**	**0.0184**	**2.6753**	**0.7113**	**0.0170**	**0.7284**		**2,969.3590**	**2,969.3590**	**0.1226**		**2,972.4234**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0897	3.1068	0.9930	0.0107	0.2911	3.6800e-003	0.2948	0.0838	3.5200e-003	0.0873		1,157.5749	1,157.5749	0.0808		1,159.5951
Worker	0.8899	0.4755	5.0539	0.0182	2.3659	0.0147	2.3805	0.6275	0.0135	0.6410		1,811.7841	1,811.7841	0.0418		1,812.8283
Total	**0.9795**	**3.5823**	**6.0469**	**0.0289**	**2.6569**	**0.0184**	**2.6753**	**0.7113**	**0.0170**	**0.7284**		**2,969.3590**	**2,969.3590**	**0.1226**		**2,972.4234**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**70.6751**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1866	0.1030	1.0834	3.8000e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		378.7432	378.7432	9.0300e-003		378.9690
Total	**0.1866**	**0.1030**	**1.0834**	**3.8000e-003**	**0.4765**	**3.0500e-003**	**0.4795**	**0.1264**	**2.8100e-003**	**0.1292**		**378.7432**	**378.7432**	**9.0300e-003**		**378.9690**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**70.5339**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1866	0.1030	1.0834	3.8000e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		378.7432	378.7432	9.0300e-003		378.9690
Total	**0.1866**	**0.1030**	**1.0834**	**3.8000e-003**	**0.4765**	**3.0500e-003**	**0.4795**	**0.1264**	**2.8100e-003**	**0.1292**		**378.7432**	**378.7432**	**9.0300e-003**		**378.9690**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**70.6751**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1792	0.0958	1.0178	3.6600e-003	0.4765	2.9600e-003	0.4794	0.1264	2.7200e-003	0.1291		364.8732	364.8732	8.4100e-003		365.0835
Total	**0.1792**	**0.0958**	**1.0178**	**3.6600e-003**	**0.4765**	**2.9600e-003**	**0.4794**	**0.1264**	**2.7200e-003**	**0.1291**		**364.8732**	**364.8732**	**8.4100e-003**		**365.0835**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.5042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**70.5339**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1792	0.0958	1.0178	3.6600e-003	0.4765	2.9600e-003	0.4794	0.1264	2.7200e-003	0.1291		364.8732	364.8732	8.4100e-003		365.0835
Total	**0.1792**	**0.0958**	**1.0178**	**3.6600e-003**	**0.4765**	**2.9600e-003**	**0.4794**	**0.1264**	**2.7200e-003**	**0.1291**		**364.8732**	**364.8732**	**8.4100e-003**		**365.0835**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3913	13.1707	33.7273	0.1155	11.6867	0.0942	11.7809	3.1226	0.0876	3.2102		11,806.6085	11,806.6085	0.6346		11,822.4732
Unmitigated	3.3913	13.1707	33.7273	0.1155	11.6867	0.0942	11.7809	3.1226	0.0876	3.2102		11,806.6085	11,806.6085	0.6346		11,822.4732

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	3,200.00	3,200.00	3200.00	5,513,435	5,513,435
Total	3,200.00	3,200.00	3,200.00	5,513,435	5,513,435

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	5.33	5.33	5.33	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.611343	0.038414	0.178161	0.100214	0.013382	0.005338	0.017151	0.024839	0.001931	0.001783	0.005765	0.000770	0.000908

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
NaturalGas Unmitigated	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	15762	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Total		**0.1700**	**1.4526**	**0.6181**	**9.2700e-003**		**0.1174**	**0.1174**		**0.1174**	**0.1174**		**1,854.3562**	**1,854.3562**	**0.0355**	**0.0340**	**1,865.3757**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	15.762	0.1700	1.4526	0.6181	9.2700e-003		0.1174	0.1174		0.1174	0.1174		1,854.3562	1,854.3562	0.0355	0.0340	1,865.3757
Total		**0.1700**	**1.4526**	**0.6181**	**9.2700e-003**		**0.1174**	**0.1174**		**0.1174**	**0.1174**		**1,854.3562**	**1,854.3562**	**0.0355**	**0.0340**	**1,865.3757**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682
Unmitigated	11.6978	7.0151	35.7928	0.0441		0.7194	0.7194		0.7194	0.7194	0.0000	8,530.0092	8,530.0092	0.2193	0.1553	8,581.7682

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.5600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7765	6.6353	2.8235	0.0424		0.5365	0.5365		0.5365	0.5365	0.0000	8,470.588 2	8,470.588 2	0.1624	0.1553	8,520.924 7
Landscaping	0.9899	0.3798	32.9692	1.7400e-003		0.1829	0.1829		0.1829	0.1829		59.4209	59.4209	0.0569		60.8435
Total	**11.6978**	**7.0151**	**35.7928**	**0.0441**		**0.7194**	**0.7194**		**0.7194**	**0.7194**	**0.0000**	**8,530.009 2**	**8,530.009 2**	**0.2193**	**0.1553**	**8,581.768 2**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.5600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7765	6.6353	2.8235	0.0424		0.5365	0.5365		0.5365	0.5365	0.0000	8,470.588 2	8,470.588 2	0.1624	0.1553	8,520.924 7
Landscaping	0.9899	0.3798	32.9692	1.7400e-003		0.1829	0.1829		0.1829	0.1829		59.4209	59.4209	0.0569		60.8435
Total	**11.6978**	**7.0151**	**35.7928**	**0.0441**		**0.7194**	**0.7194**		**0.7194**	**0.7194**	**0.0000**	**8,530.009 2**	**8,530.009 2**	**0.2193**	**0.1553**	**8,581.768 2**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Tierra Norte PBD Overlay District
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	400.00	Dwelling Unit	25.60	400,000.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2026
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	408.95	**CH4 Intensity (lb/MWhr)**	0.017	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2026

Land Use - Site Acreage

Construction Phase - CS

Demolition -

Architectural Coating - Rule 67 Paint

Vehicle Trips - ADT per Traffic Study...Trip Length per EMFAC 2014 model run for the County of San Diego for 2026

Woodstoves - Natural Gas Fireplace for 400 units

Area Coating - Rule 67 Psint

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	71.00
tblFireplaces	NumberGas	220.00	400.00
tblFireplaces	NumberNoFireplace	40.00	0.00

tblFireplaces	NumberWood	140.00	0.00
tblLandUse	LotAcreage	25.00	25.60
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.017
tblProjectCharacteristics	CO2IntensityFactor	720.49	408.95
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	HO_TL	7.50	5.33
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TL	7.30	5.33
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.33
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	5.67	8.00
tblVehicleTrips	SU_TR	4.84	8.00
tblVehicleTrips	WD_TR	5.81	8.00
tblWoodstoves	NumberCatalytic	20.00	0.00
tblWoodstoves	NumberNoncatalytic	20.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.3135	2.6406	2.9032	6.7500e-003	0.5883	0.1068	0.6951	0.2337	0.0992	0.3330	0.0000	601.7035	601.7035	0.1211	0.0000	604.7308
2025	1.1466	2.1235	2.9643	7.5100e-003	0.3442	0.0720	0.4162	0.0923	0.0677	0.1600	0.0000	674.6533	674.6533	0.0862	0.0000	676.8079
2026	1.7171	0.4069	0.5861	1.4800e-003	0.0719	0.0141	0.0860	0.0193	0.0133	0.0326	0.0000	132.4169	132.4169	0.0159	0.0000	132.8143
Maximum	**1.7171**	**2.6406**	**2.9643**	**7.5100e-003**	**0.5883**	**0.1068**	**0.6951**	**0.2337**	**0.0992**	**0.3330**	**0.0000**	**674.6533**	**674.6533**	**0.1211**	**0.0000**	**676.8079**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1217	0.5665	3.2329	6.7500e-003	0.5883	8.5400e-003	0.5968	0.2337	8.4500e-003	0.2422	0.0000	601.7030	601.7030	0.1211	0.0000	604.7303
2025	1.0092	0.7757	3.1441	7.5100e-003	0.3442	7.8700e-003	0.3521	0.0923	7.6900e-003	0.1000	0.0000	674.6530	674.6530	0.0862	0.0000	676.8075
2026	1.6894	0.1425	0.6190	1.4800e-003	0.0719	1.5500e-003	0.0735	0.0193	1.5100e-003	0.0208	0.0000	132.4168	132.4168	0.0159	0.0000	132.8142
Maximum	**1.6894**	**0.7757**	**3.2329**	**7.5100e-003**	**0.5883**	**8.5400e-003**	**0.5968**	**0.2337**	**8.4500e-003**	**0.2422**	**0.0000**	**674.6530**	**674.6530**	**0.1211**	**0.0000**	**676.8075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**11.23**	**71.29**	**-8.40**	**0.00**	**0.00**	**90.69**	**14.61**	**0.00**	**90.21**	**30.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	**1-1-2024**	**3-31-2024**	0.9452	0.1176
10	**4-1-2024**	**6-30-2024**	0.6950	0.0868
11	**7-1-2024**	**9-30-2024**	0.6426	0.2368
12	**10-1-2024**	**12-31-2024**	0.6483	0.2424
13	**1-1-2025**	**3-31-2025**	0.5952	0.2328
14	**4-1-2025**	**6-30-2025**	0.5965	0.2301
15	**7-1-2025**	**9-30-2025**	0.6031	0.2326
16	**10-1-2025**	**12-31-2025**	1.4841	1.0996
17	**1-1-2026**	**3-31-2026**	2.1008	1.8122
		Highest	2.1008	1.8122

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Energy	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	679.7337	679.7337	0.0214	8.3600e-003	682.7603
Mobile	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Waste						0.0000	0.0000		0.0000	0.0000	37.3503	0.0000	37.3503	2.2073	0.0000	92.5339
Water						0.0000	0.0000		0.0000	0.0000	8.2682	96.8083	105.0764	0.8532	0.0208	132.5946
Total	**2.5644**	**2.9791**	**9.2288**	**0.0248**	**2.0771**	**0.0770**	**2.1540**	**0.5561**	**0.0758**	**0.6318**	**45.6185**	**3,067.5643**	**3,113.1827**	**3.1958**	**0.0349**	**3,203.4793**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Energy	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	631.4516	631.4516	0.0194	8.0100e-003	634.3224
Mobile	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Waste						0.0000	0.0000		0.0000	0.0000	28.0128	0.0000	28.0128	1.6555	0.0000	69.4004
Water						0.0000	0.0000		0.0000	0.0000	8.2682	90.0362	98.3044	0.8530	0.0207	125.8007
Total	**2.5644**	**2.9791**	**9.2288**	**0.0248**	**2.0771**	**0.0770**	**2.1540**	**0.5561**	**0.0758**	**0.6318**	**36.2809**	**3,012.5100**	**3,048.7909**	**2.6417**	**0.0345**	**3,125.1140**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.47**	**1.79**	**2.07**	**17.34**	**1.15**	**2.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	2/9/2024	5	30	
2	Site Preparation	Site Preparation	2/10/2024	3/8/2024	5	20	
3	Grading	Grading	3/9/2024	5/10/2024	5	45	
4	Paving	Paving	5/11/2024	6/28/2024	5	35	
5	Building Construction	Building Construction	7/1/2024	3/6/2026	5	440	
6	Architectural Coating	Architectural Coating	11/28/2025	3/6/2026	5	71	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 810,000; Residential Outdoor: 270,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	288.00	43.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0299	0.0000	0.0299	4.5300e-003	0.0000	4.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0337	0.3132	0.2956	5.8000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	50.9941	50.9941	0.0143	0.0000	51.3508
Total	**0.0337**	**0.3132**	**0.2956**	**5.8000e-004**	**0.0299**	**0.0144**	**0.0443**	**4.5300e-003**	**0.0134**	**0.0179**	**0.0000**	**50.9941**	**50.9941**	**0.0143**	**0.0000**	**51.3508**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.8000e-004	0.0218	8.2500e-003	1.0000e-004	2.3400e-003	4.0000e-005	2.3800e-003	6.4000e-004	4.0000e-005	6.8000e-004	0.0000	9.8430	9.8430	8.9000e-004	0.0000	9.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.3000e-004	4.5200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4029	1.4029	3.0000e-005	0.0000	1.4038
Total	**1.3500e-003**	**0.0223**	**0.0128**	**1.2000e-004**	**4.1400e-003**	**5.0000e-005**	**4.2000e-003**	**1.1200e-003**	**5.0000e-005**	**1.1700e-003**	**0.0000**	**11.2459**	**11.2459**	**9.2000e-004**	**0.0000**	**11.2690**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0299	0.0000	0.0299	4.5300e-003	0.0000	4.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9300e-003	0.0301	0.3492	5.8000e-004		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	50.9940	50.9940	0.0143	0.0000	51.3507
Total	**6.9300e-003**	**0.0301**	**0.3492**	**5.8000e-004**	**0.0299**	**9.2000e-004**	**0.0308**	**4.5300e-003**	**9.2000e-004**	**5.4500e-003**	**0.0000**	**50.9940**	**50.9940**	**0.0143**	**0.0000**	**51.3507**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.8000e-004	0.0218	8.2500e-003	1.0000e-004	2.3400e-003	4.0000e-005	2.3800e-003	6.4000e-004	4.0000e-005	6.8000e-004	0.0000	9.8430	9.8430	8.9000e-004	0.0000	9.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.3000e-004	4.5200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4029	1.4029	3.0000e-005	0.0000	1.4038
Total	**1.3500e-003**	**0.0223**	**0.0128**	**1.2000e-004**	**4.1400e-003**	**5.0000e-005**	**4.2000e-003**	**1.1200e-003**	**5.0000e-005**	**1.1700e-003**	**0.0000**	**11.2459**	**11.2459**	**9.2000e-004**	**0.0000**	**11.2690**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.2718	0.1834	3.8000e-004		0.0123	0.0123		0.0113	0.0113	0.0000	33.4571	33.4571	0.0108	0.0000	33.7276
Total	**0.0266**	**0.2718**	**0.1834**	**3.8000e-004**	**0.1807**	**0.0123**	**0.1930**	**0.0993**	**0.0113**	**0.1106**	**0.0000**	**33.4571**	**33.4571**	**0.0108**	**0.0000**	**33.7276**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1223	1.1223	3.0000e-005	0.0000	1.1230
Total	**5.3000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1223**	**1.1223**	**3.0000e-005**	**0.0000**	**1.1230**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0202	0.2087	3.8000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.4570	33.4570	0.0108	0.0000	33.7275
Total	**4.6600e-003**	**0.0202**	**0.2087**	**3.8000e-004**	**0.1807**	**6.2000e-004**	**0.1813**	**0.0993**	**6.2000e-004**	**0.0999**	**0.0000**	**33.4570**	**33.4570**	**0.0108**	**0.0000**	**33.7275**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1223	1.1223	3.0000e-005	0.0000	1.1230
Total	**5.3000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1223**	**1.1223**	**3.0000e-005**	**0.0000**	**1.1230**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0724	0.7285	0.6238	1.4000e-003		0.0301	0.0301		0.0276	0.0276	0.0000	122.6689	122.6689	0.0397	0.0000	123.6608
Total	**0.0724**	**0.7285**	**0.6238**	**1.4000e-003**	**0.1952**	**0.0301**	**0.2252**	**0.0809**	**0.0276**	**0.1086**	**0.0000**	**122.6689**	**122.6689**	**0.0397**	**0.0000**	**123.6608**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	8.5000e-004	9.0400e-003	3.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.8058	2.8058	7.0000e-005	0.0000	2.8075
Total	**1.3300e-003**	**8.5000e-004**	**9.0400e-003**	**3.0000e-005**	**3.6100e-003**	**2.0000e-005**	**3.6300e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**2.8058**	**2.8058**	**7.0000e-005**	**0.0000**	**2.8075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.0743	0.7425	1.4000e-003		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	122.6688	122.6688	0.0397	0.0000	123.6606
Total	**0.0171**	**0.0743**	**0.7425**	**1.4000e-003**	**0.1952**	**2.2800e-003**	**0.1974**	**0.0809**	**2.2800e-003**	**0.0832**	**0.0000**	**122.6688**	**122.6688**	**0.0397**	**0.0000**	**123.6606**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	8.5000e-004	9.0400e-003	3.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.8058	2.8058	7.0000e-005	0.0000	2.8075
Total	**1.3300e-003**	**8.5000e-004**	**9.0400e-003**	**3.0000e-005**	**3.6100e-003**	**2.0000e-005**	**3.6300e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**2.8058**	**2.8058**	**7.0000e-005**	**0.0000**	**2.8075**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0173	0.1667	0.2560	4.0000e-004		8.2000e-003	8.2000e-003		7.5400e-003	7.5400e-003	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0173**	**0.1667**	**0.2560**	**4.0000e-004**		**8.2000e-003**	**8.2000e-003**		**7.5400e-003**	**7.5400e-003**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.0000e-004	5.2700e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6367	1.6367	4.0000e-005	0.0000	1.6377
Total	**7.8000e-004**	**5.0000e-004**	**5.2700e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1200e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.6367**	**1.6367**	**4.0000e-005**	**0.0000**	**1.6377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0213	0.3027	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9100e-003**	**0.0213**	**0.3027**	**4.0000e-004**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.0000e-004	5.2700e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6367	1.6367	4.0000e-005	0.0000	1.6377
Total	**7.8000e-004**	**5.0000e-004**	**5.2700e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1200e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.6367**	**1.6367**	**4.0000e-005**	**0.0000**	**1.6377**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0971	0.8873	1.0670	1.7800e-003		0.0405	0.0405		0.0381	0.0381	0.0000	153.0204	153.0204	0.0362	0.0000	153.9250
Total	**0.0971**	**0.8873**	**1.0670**	**1.7800e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**153.0204**	**153.0204**	**0.0362**	**0.0000**	**153.9250**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0700e-003	0.2133	0.0649	7.3000e-004	0.0188	2.5000e-004	0.0191	5.4400e-003	2.4000e-004	5.6800e-003	0.0000	71.1886	71.1886	4.8100e-003	0.0000	71.3088
Worker	0.0564	0.0360	0.3818	1.3100e-003	0.1524	1.0200e-003	0.1534	0.0405	9.3000e-004	0.0414	0.0000	118.5173	118.5173	2.9400e-003	0.0000	118.5907
Total	**0.0624**	**0.2493**	**0.4468**	**2.0400e-003**	**0.1713**	**1.2700e-003**	**0.1725**	**0.0459**	**1.1700e-003**	**0.0471**	**0.0000**	**189.7058**	**189.7058**	**7.7500e-003**	**0.0000**	**189.8995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0216	0.1475	1.1524	1.7800e-003		2.6900e-003	2.6900e-003		2.6900e-003	2.6900e-003	0.0000	153.0202	153.0202	0.0362	0.0000	153.9249
Total	**0.0216**	**0.1475**	**1.1524**	**1.7800e-003**		**2.6900e-003**	**2.6900e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**153.0202**	**153.0202**	**0.0362**	**0.0000**	**153.9249**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0700e-003	0.2133	0.0649	7.3000e-004	0.0188	2.5000e-004	0.0191	5.4400e-003	2.4000e-004	5.6800e-003	0.0000	71.1886	71.1886	4.8100e-003	0.0000	71.3088
Worker	0.0564	0.0360	0.3818	1.3100e-003	0.1524	1.0200e-003	0.1534	0.0405	9.3000e-004	0.0414	0.0000	118.5173	118.5173	2.9400e-003	0.0000	118.5907
Total	**0.0624**	**0.2493**	**0.4468**	**2.0400e-003**	**0.1713**	**1.2700e-003**	**0.1725**	**0.0459**	**1.1700e-003**	**0.0471**	**0.0000**	**189.7058**	**189.7058**	**7.7500e-003**	**0.0000**	**189.8995**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.4157	0.1258	1.4200e-003	0.0373	4.8000e-004	0.0377	0.0108	4.6000e-004	0.0112	0.0000	139.9029	139.9029	9.4100e-003	0.0000	140.1382
Worker	0.1064	0.0656	0.7047	2.4900e-003	0.3014	1.9800e-003	0.3034	0.0801	1.8200e-003	0.0819	0.0000	224.8674	224.8674	5.3600e-003	0.0000	225.0014
Total	**0.1181**	**0.4813**	**0.8305**	**3.9100e-003**	**0.3386**	**2.4600e-003**	**0.3411**	**0.0908**	**2.2800e-003**	**0.0931**	**0.0000**	**364.7703**	**364.7703**	**0.0148**	**0.0000**	**365.1396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0428	0.2916	2.2786	3.5200e-003		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.0428**	**0.2916**	**2.2786**	**3.5200e-003**		**5.3200e-003**	**5.3200e-003**		**5.3200e-003**	**5.3200e-003**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.4157	0.1258	1.4200e-003	0.0373	4.8000e-004	0.0377	0.0108	4.6000e-004	0.0112	0.0000	139.9029	139.9029	9.4100e-003	0.0000	140.1382
Worker	0.1064	0.0656	0.7047	2.4900e-003	0.3014	1.9800e-003	0.3034	0.0801	1.8200e-003	0.0819	0.0000	224.8674	224.8674	5.3600e-003	0.0000	225.0014
Total	**0.1181**	**0.4813**	**0.8305**	**3.9100e-003**	**0.3386**	**2.4600e-003**	**0.3411**	**0.0908**	**2.2800e-003**	**0.0931**	**0.0000**	**364.7703**	**364.7703**	**0.0148**	**0.0000**	**365.1396**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2930	0.3780	6.3000e-004		0.0124	0.0124		0.0117	0.0117	0.0000	54.5011	54.5011	0.0128	0.0000	54.8214
Total	**0.0321**	**0.2930**	**0.3780**	**6.3000e-004**		**0.0124**	**0.0124**		**0.0117**	**0.0117**	**0.0000**	**54.5011**	**54.5011**	**0.0128**	**0.0000**	**54.8214**

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0738	0.0223	2.5000e-004	6.7100e-003	8.0000e-005	6.7900e-003	1.9400e-003	8.0000e-005	2.0200e-003	0.0000	25.0490	25.0490	1.6800e-003	0.0000	25.0910
Worker	0.0184	0.0110	0.1193	4.3000e-004	0.0543	3.4000e-004	0.0546	0.0144	3.2000e-004	0.0147	0.0000	39.0104	39.0104	9.0000e-004	0.0000	39.0329
Total	**0.0204**	**0.0848**	**0.1416**	**6.8000e-004**	**0.0610**	**4.2000e-004**	**0.0614**	**0.0164**	**4.0000e-004**	**0.0168**	**0.0000**	**64.0594**	**64.0594**	**2.5800e-003**	**0.0000**	**64.1238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-003	0.0525	0.4103	6.3000e-004		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	54.5010	54.5010	0.0128	0.0000	54.8213
Total	**7.7000e-003**	**0.0525**	**0.4103**	**6.3000e-004**		**9.6000e-004**	**9.6000e-004**		**9.6000e-004**	**9.6000e-004**	**0.0000**	**54.5010**	**54.5010**	**0.0128**	**0.0000**	**54.8213**

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0738	0.0223	2.5000e-004	6.7100e-003	8.0000e-005	6.7900e-003	1.9400e-003	8.0000e-005	2.0200e-003	0.0000	25.0490	25.0490	1.6800e-003	0.0000	25.0910
Worker	0.0184	0.0110	0.1193	4.3000e-004	0.0543	3.4000e-004	0.0546	0.0144	3.2000e-004	0.0147	0.0000	39.0104	39.0104	9.0000e-004	0.0000	39.0329
Total	**0.0204**	**0.0848**	**0.1416**	**6.8000e-004**	**0.0610**	**4.2000e-004**	**0.0614**	**0.0164**	**4.0000e-004**	**0.0168**	**0.0000**	**64.0594**	**64.0594**	**2.5800e-003**	**0.0000**	**64.1238**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0138	0.0217	4.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0681
Total	**0.8481**	**0.0138**	**0.0217**	**4.0000e-005**		**6.2000e-004**	**6.2000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0681**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.2200e-003	0.0131	5.0000e-005	5.5800e-003	4.0000e-005	5.6200e-003	1.4800e-003	3.0000e-005	1.5200e-003	0.0000	4.1642	4.1642	1.0000e-004	0.0000	4.1667
Total	**1.9700e-003**	**1.2200e-003**	**0.0131**	**5.0000e-005**	**5.5800e-003**	**4.0000e-005**	**5.6200e-003**	**1.4800e-003**	**3.0000e-005**	**1.5200e-003**	**0.0000**	**4.1642**	**4.1642**	**1.0000e-004**	**0.0000**	**4.1667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	1.5500e-003	0.0220	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0681
Total	**0.8464**	**1.5500e-003**	**0.0220**	**4.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0681**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.2200e-003	0.0131	5.0000e-005	5.5800e-003	4.0000e-005	5.6200e-003	1.4800e-003	3.0000e-005	1.5200e-003	0.0000	4.1642	4.1642	1.0000e-004	0.0000	4.1667
Total	**1.9700e-003**	**1.2200e-003**	**0.0131**	**5.0000e-005**	**5.5800e-003**	**4.0000e-005**	**5.6200e-003**	**1.4800e-003**	**3.0000e-005**	**1.5200e-003**	**0.0000**	**4.1642**	**4.1642**	**1.0000e-004**	**0.0000**	**4.1667**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0200e-003	0.0269	0.0425	7.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	6.0002	6.0002	3.3000e-004	0.0000	6.0083
Total	**1.6609**	**0.0269**	**0.0425**	**7.0000e-005**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**6.0002**	**6.0002**	**3.3000e-004**	**0.0000**	**6.0083**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2100e-003	0.0240	9.0000e-005	0.0109	7.0000e-005	0.0110	2.9000e-003	6.0000e-005	2.9700e-003	0.0000	7.8563	7.8563	1.8000e-004	0.0000	7.8608
Total	**3.7000e-003**	**2.2100e-003**	**0.0240**	**9.0000e-005**	**0.0109**	**7.0000e-005**	**0.0110**	**2.9000e-003**	**6.0000e-005**	**2.9700e-003**	**0.0000**	**7.8563**	**7.8563**	**1.8000e-004**	**0.0000**	**7.8608**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-004	3.0300e-003	0.0431	7.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	6.0001	6.0001	3.3000e-004	0.0000	6.0083
Total	**1.6576**	**3.0300e-003**	**0.0431**	**7.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**6.0001**	**6.0001**	**3.3000e-004**	**0.0000**	**6.0083**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2100e-003	0.0240	9.0000e-005	0.0109	7.0000e-005	0.0110	2.9000e-003	6.0000e-005	2.9700e-003	0.0000	7.8563	7.8563	1.8000e-004	0.0000	7.8608
Total	**3.7000e-003**	**2.2100e-003**	**0.0240**	**9.0000e-005**	**0.0109**	**7.0000e-005**	**0.0110**	**2.9000e-003**	**6.0000e-005**	**2.9700e-003**	**0.0000**	**7.8563**	**7.8563**	**1.8000e-004**	**0.0000**	**7.8608**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Unmitigated	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	3,200.00	3,200.00	3200.00	5,513,435	5,513,435
Total	3,200.00	3,200.00	3,200.00	5,513,435	5,513,435

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	5.33	5.33	5.33	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.611343	0.038414	0.178161	0.100214	0.013382	0.005338	0.017151	0.024839	0.001931	0.001783	0.005765	0.000770	0.000908

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.4421	324.4421	0.0135	2.3800e-003	325.4885
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	372.7243	372.7243	0.0155	2.7300e-003	373.9264
NaturalGas Mitigated	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
NaturalGas Unmitigated	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.75314e+006	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
Total		**0.0310**	**0.2651**	**0.1128**	**1.6900e-003**		**0.0214**	**0.0214**		**0.0214**	**0.0214**	**0.0000**	**307.0095**	**307.0095**	**5.8800e-003**	**5.6300e-003**	**308.8339**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.75314e+006	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
Total		**0.0310**	**0.2651**	**0.1128**	**1.6900e-003**		**0.0214**	**0.0214**		**0.0214**	**0.0214**	**0.0000**	**307.0095**	**307.0095**	**5.8800e-003**	**5.6300e-003**	**308.8339**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	2.00933e+006	372.7243	0.0155	2.7300e-003	373.9264
Total		**372.7243**	**0.0155**	**2.7300e-003**	**373.9264**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	1.74905e+006	324.4421	0.0135	2.3800e-003	325.4885
Total		**324.4421**	**0.0135**	**2.3800e-003**	**325.4885**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Unmitigated	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5622					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0318	0.2721	0.1158	1.7400e-003		0.0220	0.0220		0.0220	0.0220	0.0000	315.0599	315.0599	6.0400e-003	5.7800e-003	316.9322
Landscaping	0.0891	0.0342	2.9672	1.6000e-004		0.0165	0.0165		0.0165	0.0165	0.0000	4.8515	4.8515	4.6500e-003	0.0000	4.9677
Total	**1.9334**	**0.3062**	**3.0830**	**1.9000e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**	**0.0000**	**319.9114**	**319.9114**	**0.0107**	**5.7800e-003**	**321.8998**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5622					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0318	0.2721	0.1158	1.7400e-003		0.0220	0.0220		0.0220	0.0220	0.0000	315.0599	315.0599	6.0400e-003	5.7800e-003	316.9322
Landscaping	0.0891	0.0342	2.9672	1.6000e-004		0.0165	0.0165		0.0165	0.0165	0.0000	4.8515	4.8515	4.6500e-003	0.0000	4.9677
Total	**1.9334**	**0.3062**	**3.0830**	**1.9000e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**	**0.0000**	**319.9114**	**319.9114**	**0.0107**	**5.7800e-003**	**321.8998**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	98.3044	0.8530	0.0207	125.8007
Unmitigated	105.0764	0.8532	0.0208	132.5946

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	26.0616 / 16.4301	105.0764	0.8532	0.0208	132.5946
Total		**105.0764**	**0.8532**	**0.0208**	**132.5946**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	26.0616 / 13.1441	98.3044	0.8530	0.0207	125.8007
Total		**98.3044**	**0.8530**	**0.0207**	**125.8007**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.0128	1.6555	0.0000	69.4004
Unmitigated	37.3503	2.2073	0.0000	92.5339

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	184	37.3503	2.2073	0.0000	92.5339
Total		**37.3503**	**2.2073**	**0.0000**	**92.5339**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	138	28.0128	1.6555	0.0000	69.4004
Total		**28.0128**	**1.6555**	**0.0000**	**69.4004**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

AERSCREEN

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AERSCREEN 11126 / AERMOD  1206                                        10/06/21

TITLE: Tierra Norte 400 Unit Residential


----------------------------------------------------------------------------
******************************  AREA PARAMETERS  ***************************
----------------------------------------------------------------------------

SOURCE EMISSION RATE:         0.179E-03 g/s            0.142E-02 lb/hr

AREA EMISSION RATE:           0.173E-08 g/(s-m2)       0.137E-07 lb/(hr-m2)
AREA HEIGHT:                       3.00 meters              9.84 feet
AREA SOURCE LONG SIDE:           321.87 meters           1056.00 feet
AREA SOURCE SHORT SIDE:          321.87 meters           1056.00 feet
INITIAL VERTICAL DIMENSION:        1.00 meters              3.28 feet
RURAL OR URBAN:                   RURAL

INITIAL PROBE DISTANCE =          5000. meters            16404. feet



----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  *********************
----------------------------------------------------------------------------

               BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES



----------------------------------------------------------------------------
**************************  FLOW SECTOR ANALYSIS  **************************
                 25 meter receptor spacing: 1. meters - 5000. meters
----------------------------------------------------------------------------


   MAXIMUM  IMPACT  RECEPTOR

   Zo        SURFACE   1-HR CONC  RADIAL  DIST   TEMPORAL
   SECTOR    ROUGHNESS  (ug/m3)    (deg)   (m)    PERIOD
  ----------------------------------------------------
      1*       1.000    0.2337      45   225.0     WIN
* = worst case diagonal



----------------------------------------------------------------------------
**********************  MAKEMET METEOROLOGY PARAMETERS  ********************
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-----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                  0.35
BOWEN RATIO:             1.50
ROUGHNESS LENGTH:       1.000 (meters)


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.16  0.043 -9.000  0.020 -999.   21.      5.4 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   250.0    2.0


       METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT
       --------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.16  0.043 -9.000  0.020 -999.   21.      5.4 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   250.0    2.0
```

*********************** AERSCREEN AUTOMATED DISTANCES **********************
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	0.1372	2525.00	0.2211E-01
25.00	0.1495	2550.00	0.2184E-01
50.01	0.1623	2575.00	0.2157E-01
75.00	0.1742	2600.00	0.2132E-01
100.00	0.1856	2625.00	0.2107E-01
125.00	0.1965	2650.00	0.2082E-01
150.01	0.2069	2675.00	0.2058E-01
174.99	0.2169	2700.00	0.2034E-01
200.00	0.2266	2725.01	0.2011E-01
225.00	0.2337	2749.99	0.1989E-01
250.00	0.2333	2775.00	0.1967E-01
274.99	0.2186	2800.00	0.1945E-01
300.00	0.2028	2825.00	0.1924E-01
325.00	0.1887	2849.99	0.1903E-01
350.00	0.1765	2875.00	0.1882E-01
375.01	0.1658	2900.00	0.1862E-01
400.00	0.1564	2925.00	0.1842E-01
425.00	0.1479	2950.01	0.1822E-01
450.00	0.1398	2975.00	0.1803E-01
475.01	0.1326	3000.00	0.1784E-01
500.00	0.1261	3025.00	0.1765E-01
525.00	0.1203	3050.00	0.1747E-01
550.00	0.1150	3075.00	0.1729E-01
575.01	0.1101	3100.00	0.1711E-01
599.99	0.1057	3125.00	0.1694E-01
625.00	0.1016	3150.00	0.1677E-01
650.00	0.9779E-01	3174.99	0.1661E-01
675.00	0.9428E-01	3200.00	0.1644E-01
699.99	0.9100E-01	3225.00	0.1628E-01
725.00	0.8794E-01	3250.00	0.1612E-01
750.00	0.8503E-01	3274.99	0.1597E-01
775.00	0.8233E-01	3300.00	0.1582E-01
800.01	0.7978E-01	3325.00	0.1567E-01
825.00	0.7738E-01	3350.00	0.1552E-01
850.00	0.7510E-01	3375.01	0.1538E-01
875.00	0.7293E-01	3400.00	0.1523E-01
900.01	0.7087E-01	3425.00	0.1509E-01
924.99	0.6893E-01	3450.00	0.1495E-01

950.00	0.6708E-01	3475.01	0.1482E-01
975.00	0.6530E-01	3499.99	0.1468E-01
1000.00	0.6362E-01	3525.00	0.1455E-01
1024.99	0.6202E-01	3550.00	0.1442E-01
1050.00	0.6046E-01	3575.00	0.1429E-01
1075.00	0.5898E-01	3600.00	0.1416E-01
1100.00	0.5757E-01	3625.00	0.1404E-01
1125.01	0.5621E-01	3650.00	0.1391E-01
1150.00	0.5490E-01	3675.00	0.1379E-01
1175.00	0.5364E-01	3700.00	0.1367E-01
1200.00	0.5245E-01	3725.00	0.1355E-01
1225.01	0.5129E-01	3750.00	0.1344E-01
1250.00	0.5018E-01	3775.00	0.1332E-01
1275.00	0.4910E-01	3800.00	0.1321E-01
1300.00	0.4806E-01	3825.00	0.1310E-01
1325.01	0.4707E-01	3850.00	0.1299E-01
1349.99	0.4612E-01	3875.00	0.1288E-01
1375.00	0.4519E-01	3900.00	0.1278E-01
1400.00	0.4428E-01	3925.00	0.1267E-01
1425.00	0.4341E-01	3950.00	0.1257E-01
1449.99	0.4257E-01	3975.00	0.1247E-01
1475.00	0.4177E-01	4000.00	0.1237E-01
1500.00	0.4098E-01	4025.00	0.1227E-01
1525.00	0.4022E-01	4050.00	0.1217E-01
1550.01	0.3948E-01	4075.00	0.1208E-01
1575.00	0.3877E-01	4100.00	0.1198E-01
1600.00	0.3807E-01	4125.00	0.1189E-01
1625.00	0.3740E-01	4150.00	0.1180E-01
1650.01	0.3675E-01	4175.00	0.1171E-01
1674.99	0.3611E-01	4200.00	0.1162E-01
1700.00	0.3550E-01	4225.01	0.1153E-01
1725.00	0.3490E-01	4249.99	0.1144E-01
1750.00	0.3432E-01	4275.00	0.1136E-01
1774.99	0.3376E-01	4300.00	0.1127E-01
1800.00	0.3321E-01	4325.00	0.1119E-01
1825.00	0.3268E-01	4349.99	0.1111E-01
1850.00	0.3216E-01	4375.00	0.1102E-01
1875.01	0.3166E-01	4400.01	0.1094E-01
1900.00	0.3117E-01	4425.00	0.1086E-01
1925.01	0.3069E-01	4450.00	0.1078E-01
1950.01	0.3022E-01	4475.00	0.1070E-01
1975.01	0.2976E-01	4500.00	0.1063E-01
1999.99	0.2932E-01	4525.00	0.1055E-01
2025.00	0.2890E-01	4550.00	0.1048E-01
2050.00	0.2847E-01	4575.00	0.1040E-01
2075.00	0.2806E-01	4600.00	0.1033E-01
2099.99	0.2766E-01	4625.00	0.1025E-01
2125.00	0.2727E-01	4650.00	0.1018E-01
2150.00	0.2689E-01	4675.00	0.1011E-01
2175.00	0.2652E-01	4700.00	0.1004E-01

2200.00	0.2615E-01	4725.00	0.9973E-02
2225.00	0.2579E-01	4750.00	0.9904E-02
2250.00	0.2545E-01	4775.00	0.9836E-02
2275.00	0.2511E-01	4800.00	0.9770E-02
2300.01	0.2478E-01	4825.00	0.9704E-02
2325.00	0.2445E-01	4850.00	0.9639E-02
2350.00	0.2414E-01	4875.00	0.9575E-02
2375.00	0.2383E-01	4900.00	0.9511E-02
2400.01	0.2353E-01	4925.00	0.9447E-02
2424.99	0.2323E-01	4950.00	0.9385E-02
2450.00	0.2294E-01	4975.00	0.9323E-02
2475.00	0.2266E-01	5000.00	0.9262E-02
2500.00	0.2238E-01		

********************** AERSCREEN MAXIMUM IMPACT SUMMARY *********************

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.2354	0.2354	0.2354	0.2354	N/A

DISTANCE FROM SOURCE 233.01 meters

IMPACT AT THE AMBIENT BOUNDARY	0.1372	0.1372	0.1372	0.1372	N/A

DISTANCE FROM SOURCE 1.00 meters

ATTACHMENT C

Health Risk Calculations (Tier 4 Construction Equipment)

Air Quality Health Risk Calculations (Worst-Case)
Tierra Norte (Tier 4)

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	**0.0136**
	Construction Start	**1/1/2024**
	Construction Complete	**3/6/2026**
	Days	**795**
	Construction Emission per day (lb/day)	**0.034213836**
	Annual Duration (Days)	**365**
	Annualized Emission Rate (Grams/Second)	**0.000179385**
	Project Site Size (Acres)	**25.6**
	Project Site Size (meters^2)	**103599.5244**
	Length of Smalles Side (meters)	**321.8688**
Used as an input to AERSCREEN	Emission Rate over Grading Area(g/s-m^2)	**1.73E-09**
From AERSCREEN*0.08	Concentration Annual (Ug/M^3)	**0.0188**

	Days	Days to years				
Duration	795	2.178082192				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.0188	0.0188	0.0188	0.0188	0.0188	0.0188
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000652	0.00001967	0.00001554	0.00001345	0.00000605	0.00000523
Construction Days	795	2.178082192				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	2.178082192	2.178082192	2.178082192	2.178082192	2.178082192
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	2.17565E-07	5.72326E-06	1.14883E-06	9.9405E-07	1.51066E-07	1.30773E-07
Risk per million Exposed	0.217565417	5.723259203	1.148827689	0.99404951	0.151065627	0.13077323
Cancer Risk Per Million 9-years	7.09					
Cancer Risk Per Million 30-years	7.09					
Cancer Risk Per Million 70-years	**7.07**					

ATTACHMENT D

EMFAC 2014 Model Run - 2026

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: San Diego
Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips
San Diego	2026	HHDT	Aggregatec	Aggregatec	GAS	167.5957326	21749.52304	3353.255417
San Diego	2026	HHDT	Aggregatec	Aggregatec	DSL	15645.91165	2135078.651	0
San Diego	2026	LDA	Aggregatec	Aggregatec	GAS	1451654.062	47518288.54	9191060.676
San Diego	2026	LDA	Aggregatec	Aggregatec	DSL	18622.51166	616981.99	117205.7083
San Diego	2026	LDA	Aggregatec	Aggregatec	ELEC	121062.083	4949434.022	785628.5789
San Diego	2026	LDT1	Aggregatec	Aggregatec	GAS	110115.5939	3331644.121	666437.355
San Diego	2026	LDT1	Aggregatec	Aggregatec	DSL	124.8114255	2633.841787	613.970893
San Diego	2026	LDT1	Aggregatec	Aggregatec	ELEC	42.69926559	1352.096485	259.1206316
San Diego	2026	LDT2	Aggregatec	Aggregatec	GAS	452771.2683	15436548.86	2865498.527
San Diego	2026	LDT2	Aggregatec	Aggregatec	DSL	970.5635469	33713.91312	6177.316206
San Diego	2026	LHDT1	Aggregatec	Aggregatec	GAS	16314.81646	444554.2917	243066.4562
San Diego	2026	LHDT1	Aggregatec	Aggregatec	DSL	23051.92533	717478.8991	289964.2213
San Diego	2026	LHDT2	Aggregatec	Aggregatec	GAS	4046.175021	138815.0608	60281.97901
San Diego	2026	LHDT2	Aggregatec	Aggregatec	DSL	9116.703082	324679.087	114676.656
San Diego	2026	MCY	Aggregatec	Aggregatec	GAS	71325.57419	500602.409	142636.8833
San Diego	2026	MDV	Aggregatec	Aggregatec	GAS	268481.0435	8489901.386	1669638.038
San Diego	2026	MDV	Aggregatec	Aggregatec	DSL	6019.410703	211944.3776	38351.37966
San Diego	2026	MH	Aggregatec	Aggregatec	GAS	8321.649313	61737.13592	832.4977973
San Diego	2026	MH	Aggregatec	Aggregatec	DSL	2245.347186	17146.85063	224.5347186
San Diego	2026	MHDT	Aggregatec	Aggregatec	GAS	3171.174025	164145.6455	63448.8499
San Diego	2026	MHDT	Aggregatec	Aggregatec	DSL	26576.49204	1325120.363	0
San Diego	2026	OBUS	Aggregatec	Aggregatec	GAS	1755.939329	93481.56971	35132.8341
San Diego	2026	OBUS	Aggregatec	Aggregatec	DSL	980.0428572	74167.93587	0
San Diego	2026	SBUS	Aggregatec	Aggregatec	GAS	460.1745622	20767.56101	1840.698249
San Diego	2026	SBUS	Aggregatec	Aggregatec	DSL	1216.407802	46089.03739	0
San Diego	2026	UBUS	Aggregatec	Aggregatec	GAS	483.1218265	64703.68329	1932.487306
San Diego	2026	UBUS	Aggregatec	Aggregatec	DSL	673.1632845	90155.61205	2692.653138
							Total VMT	Total Trips
						Total	86832916.46	16300954.68
						VMT/Trip	5.326860799	

ATTACHMENT E

CALINE 4 Modeling

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: College Drive and SR-76 AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S	Z0= 100. CM	ALT= 300. (M)
BRG= WORST CASE	VD= 0.0 CM/S	
CLAS= 7 (G)	VS= 0.0 CM/S	
MIXH= 1000. M	AMB= 3.1 PPM	
SIGTH= 5. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. west section	-150	0	0	0	AG	1166	0.8	0.0	10.1
B. east section	-150	0	0	0	AG	2454	0.8	0.0	10.1
C. south sectio	0	-150	0	0	AG	1262	0.8	0.0	10.1
D. north sectio	0	150	0	0	AG	1804	0.8	0.0	10.1

(LINK COORDINATES (M) span X1–Y2)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	15	15	1.8
2. Recpt 2	-15	15	1.8
3. Recpt 3	-15	-15	1.8
4. Recpt 4	15	-15	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	259.	3.3	0.1	0.1	0.0	0.1
2. Recpt 2	169.	3.3	0.0	0.1	0.1	0.0
3. Recpt 3	11.	3.3	0.0	0.1	0.0	0.1

```
   4. Recpt 4  *  281. *   3.3 *  0.1  0.1  0.0  0.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: College Drive and SR-76 PM
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 100. CM            ALT=   300. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  3.1 PPM
     SIGTH=    5. DEGREES       TEMP= 10.0 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ---------------*-------------------------*-----------------------------
 A. west section *  -150     0     0     0 *  AG   1166   0.8    0.0  10.1
 B. east section *  -150     0     0     0 *  AG   1928   0.8    0.0  10.1
 C. south sectio *     0  -150     0     0 *  AG   1262   0.8    0.0  10.1
 D. north sectio *     0   150     0     0 *  AG   1804   0.8    0.0  10.1


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Recpt 1  *     15     15   1.8
 2. Recpt 2  *    -15     15   1.8
 3. Recpt 3  *    -15    -15   1.8
 4. Recpt 4  *     15    -15   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *      CONC/LINK
             *  BRG  * CONC  *        (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D
-------------*-------*-------*--------------------
 1. Recpt 1  *  259. *   3.3 *  0.1  0.1  0.0  0.1
 2. Recpt 2  *  169. *   3.3 *  0.0  0.1  0.1  0.0
 3. Recpt 3  *   11. *   3.3 *  0.0  0.1  0.0  0.1
```

4. Recept 4 * 281. *   3.3 * 0.1 0.1 0.0 0.0

APPENDIX G
BIOLOGICAL RESOURCES LETTER REPORT – EASTERN PARCEL

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September 15, 2021

Dan Niebaum
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008

Subject: **Biological Resources Letter Report for the 9.71-acre North River Road (Kawano Property) Project Site, Oceanside, California; APN 157-060-40-00; Prepared for the City of Oceanside**

Mr. Niebaum:

REC Consultants, Inc. has prepared this letter report to address potential impacts of the proposed project to biological resources on a 9.71-acre parcel located in the City of Oceanside.

SUMMARY

The North River Road (Kawano Property) Project (Project) located within the City of Oceanside proposes a General Plan Amendment and Zone Amendment to prepare the Project site for future residential development. REC Consultants, Inc. conducted a survey on this parcel to document biological resources on the site. The undeveloped portions of the parcel contain disturbed land and non-native vegetation; no special-status species were detected or have moderate to high potential to occur onsite. Impacts to these habitats are not considered significant and would not require mitigation.

INTRODUCTION, PROJECT DESCRIPTION, LOCATION, SETTING

Project Description

The Project proposes a General Plan Amendment and Zone Amendment for the property located at 4665 North River Road to allow for future development of the site. The property is currently designated as Light Industrial (LI) under the City's General Plan and as Limited Industrial under the Zoning Ordinance. This proposal would re-designate the property as Medium Density - C Residential (MDC-R) under the General Plan and as Medium Density Residential C (RM-C) under the Zoning Ordinance.

Development of the site is not being proposed at this time, but in order to determine Project impacts and mitigation, this report assumes that all of the land within the parcel boundaries would be developed in the future. Actual impacts may differ once a site plan has been created for this Project.

Project Location and Setting
The 9.71-acre Project site (Site) is located within the City of Oceanside north of the San Luis Rey River (**Figures 1** and **2**). The Site is bordered by North River Road and then residential development to the north, extensive paved parking areas associated with light industrial development to the east and south, and agriculture to the west (**Figure 3**).

Onsite elevation ranges from approximately 70 feet (21 meters) above mean sea level (AMSL) to 77 feet (23 meters) AMSL. According to the Web Soil Survey (USDA 2016), soil on the Site is comprised of Tujunga sand, 0-5% slopes. However, because the only undeveloped land onsite is disturbed, actual soil conditions may differ.

Regional Context
The incorporated City of Oceanside (City) is the third largest city in San Diego County and contains the San Luis Rey River. The City is included in the Multiple Habitat Conservation Program and uses the *Oceanside Subarea Habitat Conservation Plan/Natural Communities Conservation Plan* (Plan) to address how the City will conserve natural biotic communities and sensitive plant and wildlife species. According to the "Preserve Planning Map and Habitat Conservation Overlay Zones" figure of this Plan, the Site is not within the Wildlife Corridor Planning Zone, the Coastal Zone, or the boundaries of any Pre-Approved Mitigation Area; however, the Site is within the Offsite Mitigation Zone. (City of Oceanside 2010)

HABITATS / VEGETATION COMMUNITIES

Existing biological resources on the Site were investigated through a field survey and records review. Literature review consisted of a search and review of California Natural Diversity Data Base (CNDDB) records of rare and special-status plant and animal species within the Project USGS 7.5' quadrangle (San Luis Rey) and surrounding quadrangles (Las Pulgas Canyon, Morro Hill, Bonsall, Oceanside, San Marcos, Encinitas and Rancho Santa Fe), recent and historical aerial photographs of the Site and surrounding areas, and soil maps and descriptions from the Soil Survey, San Diego Area, California (USDA 1973, USDA 2016).

One general survey was conducted by REC Field Biologist Lee BenVau; see Table 1 for details.

Table 1. Surveys Conducted on the Project Site

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
12/11/15	10:00 AM - 11:10 AM	58-61	Broken clouds (recently rained) to overcast (raining)	0-2 to 2-7	General	Lee BenVau

Plant species were identified in the field or collected for later identification, and wildlife species were identified directly by sight or vocalizations and indirectly by scat, tracks, or burrows. Field notes were maintained throughout the survey; all observed plant and animal species were recorded, and habitats and special-status species were mapped. Habitats within a 100-foot perimeter around the Site were observed from the Site or public roadways. Mapping of biological resources on the Site was conducted on a satellite image scaled at approximately 1 inch = 65 feet.

Vegetation communities and land cover classification in this report follow Holland (1986) as updated by Oberbauer et al. (2008). Plant taxonomy and nomenclature in this report follow the Jepson eFlora (Jepson 2016) and the Jepson Manual, second edition (Baldwin et al. 2012) for taxonomy and scientific names, and Rebman and Simpson (2014) for common names, with some rare plant common names from the California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2016). Wildlife taxonomy and nomenclature in this report follow *Mammal Species of the World* (Wilson and Reeder 2005) for mammals, Avibase (Lepage 2015) for birds, California Herps (Nafis 2015) for reptiles and amphibians, Butterflies of America (Warren et al. 2015) for butterflies, BugGuide (ISUDE 2015) for other insects and arachnids, and the Integrated Taxonomic Information System (ITIS 2015) for other invertebrates, as well as the San Diego Natural History Museum mammal, bird, reptile, amphibian, butterfly, and spider checklists for localized subspecies information (SDNHM 2005, 2002, and undated).

General Survey Results

During REC's Site survey, two land cover categories were observed onsite: developed and disturbed land. These are shown in **Figure 4** and discussed below.

Developed land (Habitat Code 12000) occupies approximately 5.55 acres onsite. This land cover category consists of "Areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that require irrigation. Areas where no natural lands is evident due to a large amount of debris or other materials being placed upon it may also be considered urban/developed (e.g. car recycling plant, quarry)." Developed land is typically unvegetated or landscaped with a variety of ornamental (usually non-native) plants. (Oberbauer et al. 2008)

Developed land onsite consists of existing structures and paved areas such as parking lots and driveways along with limited planting areas. Plants observed on developed land were limited to non-native species only and consisted of Deodar cedar (*Cedrus deodara*), lemon (*Citrus x limon*), red-stem filaree (*Erodium cicutarium*), spotted spurge (*Euphorbia maculata*), cultivated bean (Fabaceae), English ivy (*Hedera helix*), lettuce (*Lactuca sativa*), mission prickly-pear (*Opuntia ficus-indica*), and plum (*Prunus* sp.).

No wildlife species were observed on or over developed land onsite.

Disturbed land (Habitat Code 11300) occupies approximately 3.96 acre onsite. This land cover category is comprised of "Areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, but continues to retain a soil substrate. Typically vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed habitat include areas that have been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e. dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." Characteristic species are typically invasive, non-native forb species such as Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*), sea-figs (*Carpobrotus* spp.), star-thistles (*Centaurea* spp.), sweet fennel (*Foeniculum vulgare*), horehound (*Marrubium vulgare*), Russian-thistles (*Salsola* spp.), London rocket (*Sisymbrium irio*), sow-thistles (*Sonchus* spp.) and wild radish (*Raphanus sativus*). Perennial grasses such as pampas grass (*Cortaderia selloana*) and African fountain grass (*Pennisetum setaceum*) are also commonly found in this land cover category. (Oberbauer et al. 2008)

Disturbed land onsite consists of open soil primarily vegetated by non-native annual species such as tocalote (*Centaurea melitensis*), red-stem filaree, and spotted spurge along with the following invasive species: giant reed (*Arundo donax*), pampas grass (*Cortaderia selloana*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), tamarisk (*Tamarix* sp.) and Mexican fan palm (*Washingtonia robusta*). In areas where the land is slightly less disturbed, such as the banks on the south side of the Site, native species such as western ragweed (*Ambrosia psilostachya*), coyote brush (*Baccharis pilularis* subsp. *consanguinea*), mule-fat (*B. salicifolia* subsp. *salicifolia*), salt heliotrope (*Heliotropium curassavicum* var. *oculatum*), and telegraph weed (*Heterotheca grandiflora*) occur. These species were limited to scattered individuals or very small patches too small to be mapped as distinct from disturbed land.

Wildlife detected on disturbed land consisted of two invertebrate species: brown garden snail (*Helix aspersa*) [shells] and funnel weaver spider (Family Agelenidae); four bird species: killdeer (*Charadrius v. vociferus*), Say's phoebe (*Sayornis saya*), black phoebe (*S. nigricans semiater*), and song sparrow (*Melospiza melodia*); and one mammal species: California ground squirrel (*Spermophilus beecheyi nudipes*) [holes].

<u>Non-native Vegetation (Habitat Code 11000)</u> occupies approximately 0.19 acres onsite. This habitat category is "Characterized by predominantly non-native species introduced and established through human action. These areas are not typically artificially irrigated, but receive water from precipitation or runoff" (Oberbauer et al. 2008).

Onsite non-native vegetation is characterized by non-native species such as cyclops acacia (*Acacia cyclops*), ngaio (*Myoporum laetum*) and Mexican fan palm as well as Australian saltbush (*Atriplex semibaccata*), red brome (*Bromus madritensis* subsp. *rubens*), ripgut grass (*Bromus diandrus*), lamb's quarters (*Chenopodium album*) and horehound (*Marrubium vulgare*).

No wildlife species were observed on or over non-native vegetation onsite.

Complete lists of plant and animal species detected onsite are provided in **Appendices A** and **B**, respectively.

SPECIAL-STATUS SPECIES

For the purposes of this report, a sensitive or special-status plant or animal is any taxon (species, subspecies, or variety) that is officially listed by California or the federal government as Endangered, Threatened, or Rare, or a candidate for one of those listings; classified as Fully Protected, Species of Special Concern, or Watch List animal species by the California Department of Fish and Wildlife

(CDFW); included in California Rare Plant Ranks (CRPR) 1 through 4; or included in the City of Oceanside Narrow Endemics list.

Lists of special-status plants and animals with the potential to occur on the Site were generated from the CNDDB RareFind5 database. The resulting lists include any special-status species documented within Site's USGS 7.5' quadrangle or surrounding quadrangles. **Appendix C** provides information on these special-status plant species, as well as an evaluation of the potential for each species to occur onsite, based on CNDDB, the CNPS Inventory of Rare and Endangered Plants (on-line version, 2013), Reiser's *Rare Plants of San Diego County* (2001), professional botanical experience, and field observations. **Appendix D** provides information on these animal species, and an evaluation of the potential for each species to occur onsite, based on species requirements, CNDDB search results, and field observations.

Special-status Species Observed on the Project Site

No special status-species were observed onsite.

Special-status Species with Moderate to High Potential to Occur on the Project Site

Based on CNDDB records searches in the Project quadrangle and evaluation of current Site conditions, no species have moderate to high potential to occur onsite.

Narrow Endemic Species

The City of Oceanside has designated 16 plant and 6 animal species as narrow endemics. No narrow endemic species are expected to occur onsite; see Tables 2 and 3 below for explanation.

Table 2. Narrow Endemic Plant Species and Potential to Occur on the Project Site

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Acanthomintha ilicifolia	San Diego thornmint	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Ambrosia pumila	San Diego ambrosia	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Arctostaphylos glandulosa subsp. *crassifolia*	Del Mar manzanita	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite and would have been detectable and was not observed.
Baccharis vanessae	Encinitas baccharis	No	Not expected; not known to occur in Project quad and suitable habitat and soil does not occur onsite; would have been detectable and was not observed.
Brodiaea filifolia	Thread-leaved brodiaea	No	Not expected; known to occur in Project quad but suitable soils do not occur onsite.
Chorizanthe orcuttiana	Orcutt's spineflower	No	Not expected; not known to occur in Project quad and suitable habitat does not occur onsite.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Dudleya blochmaniae var. *brevifolia*	Short-leaved dudleya	No	Not expected; known to occur in Project quad but suitable habitat and soils do not occur onsite.
Dudleya variegata	Variegated dudleya	No	Not expected; not known to occur in Project quad and suitable soils and habitat do not occur onsite.
Eryngium aristulatum var. *parishii*	San Diego button-celery	No	Not expected; known to occur in Project quad, but suitable habitat does not occur onsite.

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Hazardia orcuttii	Orcutt's hazardia	No	Not expected; known to occur in Project quad but suitable soils and habitat do not occur onsite; would have been detectable and was not observed.
Lotus nuttallianus	Nuttall's lotus	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Muilla clevelandii	San Diego goldenstar	No	Not expected; known to occur in Project quad but suitable habitat and soils do not occur onsite.
Myosurus minimus subsp. *apus*	Little mousetail	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Navarretia fossalis	Spreading navarretia	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Orcuttia californica	California Orcutt grass	No	Not expected; not known to occur in Project quad and suitable habitat does not occur onsite.

Table 3. Narrow Endemic Animal Species and Potential to Occur on the Project Site

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Branchinecta sandiegonensis	San Diego fairy shrimp	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Campylorhynchus brunneicapillus cousei	Coastal cactus wren	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Cicindela latesignata obliviosa	Oblivious tiger beetle	No	Not expected; not known to occur in Project quad or surrounding quads and suitable habitat does not occur onsite.
Euphyes vestris harbisoni	Harbison's dun skipper	No	Not expected; no current data available from CNDDB, but historically only 16 occurrences known[1], host plant (*Carex spissa*) not observed.
Perognathus longimembris pacificus	Pacific pocket mouse	No	Not expected; not known to occur in Project quad and suitable habitat does not occur onsite.
Streptocephalus woottoni	Riverside fairy shrimp	No	Not expected; not known to occur in Project quad and suitable habitat does not occur onsite.

Raptor Foraging and Migratory Birds

Raptors are protected under California Fish and Game Code Section 3503.5, which specifically protects all birds in the orders Falconiformes or Strigiformes (raptors, including owls and turkey vultures). It is unlawful to take, possess or destroy any such raptors or their nests and eggs except as otherwise provided in the Fish and Game Code. No raptors were detected during the survey and the Site is very unlikely to serve as raptor foraging habitat due to the Site being partially developed and containing only small areas of disturbed land with limited amounts of suitable prey.

California Fish and Game Code Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant to the Code. The federal Migratory Bird Treaty Act prohibits the killing or transport of native migratory birds, or any part, nest, or egg or any such bird unless allowed by another regulation (such as for "game" birds). Therefore, all native, non-game birds on the Site, and the nests and eggs of all native non-game birds, are protected during the nesting season even if these birds are not special-status or otherwise protected.

[1] Faulkner and Klein, 2004

Large Mammal Use / Wildlife Corridor
No evidence of Site use by large mammals such as mule deer (*Odocoileus hemionus*) was found during REC's survey. The Site is separated from land along the San Luis Rey River that large animals could potentially use by a large parking area. The Site cannot serve as a wildlife corridor or linkage because it has no connectivity to land that could serve as a wildlife corridor or linkage by the development around the Site.

JURISDICTIONAL WETLANDS AND WATERWAYS

Although the Site is near the San Luis Rey River, no jurisdictional wetlands or waterways occur onsite. Due to the Site's proximity to the San Luis Rey River, it is near an area designated as a 100 year floodplain in the "Development Constraints" figure of the City's Plan (City of Oceanside 2010). However, that designation does not extend onsite.

OTHER UNIQUE FEATURES/RESOURCES

The Site does not include any hilltops, rock outcrops, uncommon soils, unusual topography or any other unique features or resources.

SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

Impacts to biological resources can be categorized as direct, indirect, or cumulative. Direct impacts are a result of Project implementation, and generally include: loss of vegetation, special-status habitats, and plant and animal populations; introduction of non-native species which may outcompete and displace native vegetation; activity-related wildlife mortality; loss of foraging, nesting, breeding, or burrowing habitat; and fragmentation of wildlife corridors. Indirect impacts occur as a result of the increase in human encroachment in the natural environment and include off-road vehicle use, which impacts special-status plant and animal species; harassment and/or collection of wildlife species; wildlife predation by domestic animals that intrude into open space areas; and increased wildlife mortality along roads. **Figure 5** depicts the Project's anticipated direct impacts to biological resources that would occur from implementation of the Project. Anticipated direct and indirect Project impacts to habitats and special-status resources are discussed in the following sections.

Direct Impacts
Implementation of the Project is assumed to result in the direct impact of all 9.71 acres of land onsite. Offsite impacts are not expected at this time. Anticipated habitat impacts resulting from implementation of the Project and required mitigation are summarized in Table 4, below.

Table 4. Habitat/Vegetation Communities and Impacts

Habitat/Vegetation Community	Existing Onsite (acres)	Impacts Onsite (acres)	Mitigation Ratio	Mitigation Required (acres)
Developed Land (12000)	5.55	5.55	-	0.00

Habitat/Vegetation Community	Existing Onsite (acres)	Impacts Onsite (acres)	Mitigation Ratio	Mitigation Required (acres)
Disturbed Land (11300)	3.96	3.96	-	0.00
Non-native Vegetation (11000)	0.19	0.19	-	0.00
TOTAL*	**9.71**	**9.71**	**-**	**0.00**

*Numbers do not sum due to rounding; the total value is correct.

Impacts to developed land, disturbed land and non-native vegetation are not considered significant and would not require mitigation. Future development of the Site would not directly impact any wildlife corridors, linkages, or wildlife nursery sites.

Potentially Significant Indirect Impacts

The Project is surrounded by development to the north, south and east, and agriculture to the west. The implementation of an infill development project would not result in any significant indirect impacts.

Proposed Mitigation

The Project would not result in any significant impacts to sensitive habitats or species, therefore, mitigation is not required nor proposed.

Avoidance Measures

Although the Project would not result in any significant impacts, the Project would incorporate certain avoidance measures to prevent significant impacts:

- The project applicant shall develop an educational pamphlet (in English and Spanish) for the identification of raptor nests and to guide tree pruning activities in suburban areas during the breeding season. Landscaping companies and tree trimming services that have projects in the City shall be required to use the pamphlet to educate their employees on the recognition of raptor nest trees. Trimming of trees containing raptor or migrating bird nests shall be prohibited during the raptor breeding season (January 15 to August 31). Human disturbance shall be restricted around documented nesting habitat during the breeding season based on the following:

- To avoid any direct and indirect impacts to raptors and/or any migratory birds, grubbing and clearing of vegetation that may support active nests and construction activities adjacent to nesting habitat would occur outside of the breeding season (January 15 to August 31). If removal of habitat and/or construction activities is necessary adjacent to nesting habitat during the breeding season, the applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of non-listed nesting migratory birds on or within 300 feet of the construction area, and federally or state-listed birds and raptors on or within 500 feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected by the City-approved biologist, the following buffers shall be established:

1. no work within 300 feet of a non-listed nesting migratory bird nest, and
2. no work within 500 feet of a listed bird or raptor nest. However, the City may reduce these buffer widths depending on site-specific conditions (e.g., the width and type of screening vegetation between the nest and proposed activity) or the existing ambient level of activity (e.g., existing level of human activity within the buffer distance). If construction must take place within the recommended buffer widths above, the project applicant would contact the City to determine the appropriate buffer.

- Project-related landscaping shall not include exotic plant species that may be invasive to native habitats. Invasive exotic plant species not to be used include those listed on the California Invasive Plant Council's Invasive Plant Inventory.

CUMULATIVE IMPACTS

Cumulative impacts occur as a result of ongoing direct and indirect impacts of unrelated projects within a geographic area, and are assessed on a regional basis to determine the overall effect of numerous activities on a special-status resource over a larger area.

Because the Site is already partially developed, surrounded by development on three sides, the only undeveloped land onsite is disturbed and no special-status species were detected or have moderate to high potential to occur onsite, cumulative impacts can be determined to be below a level of significance without conducting a review of other projects in the region.

CONCLUSION

Implementation of the proposed North River Road (Kawano Property) Project is assumed to result in direct impacts to 5.55 acres of developed land, 3.96 acres of disturbed land and 0.19 acres of non-native vegetation. Mitigation is not required for impacts to these habitats. Cumulative impacts are below a level of significance and do not require mitigation.

This concludes REC's biological resources letter report. Please do not hesitate to contact REC with any questions or comments. Thank you.

Sincerely,

Lee BenVau

Lee BenVau
Field Biologist

PREPARERS

This report has been prepared by REC Consultants, Inc. staff:
Lee BenVau – Field Biologist, Primary Author
James Cooper – GIS

FIGURES

ATTACHMENTS

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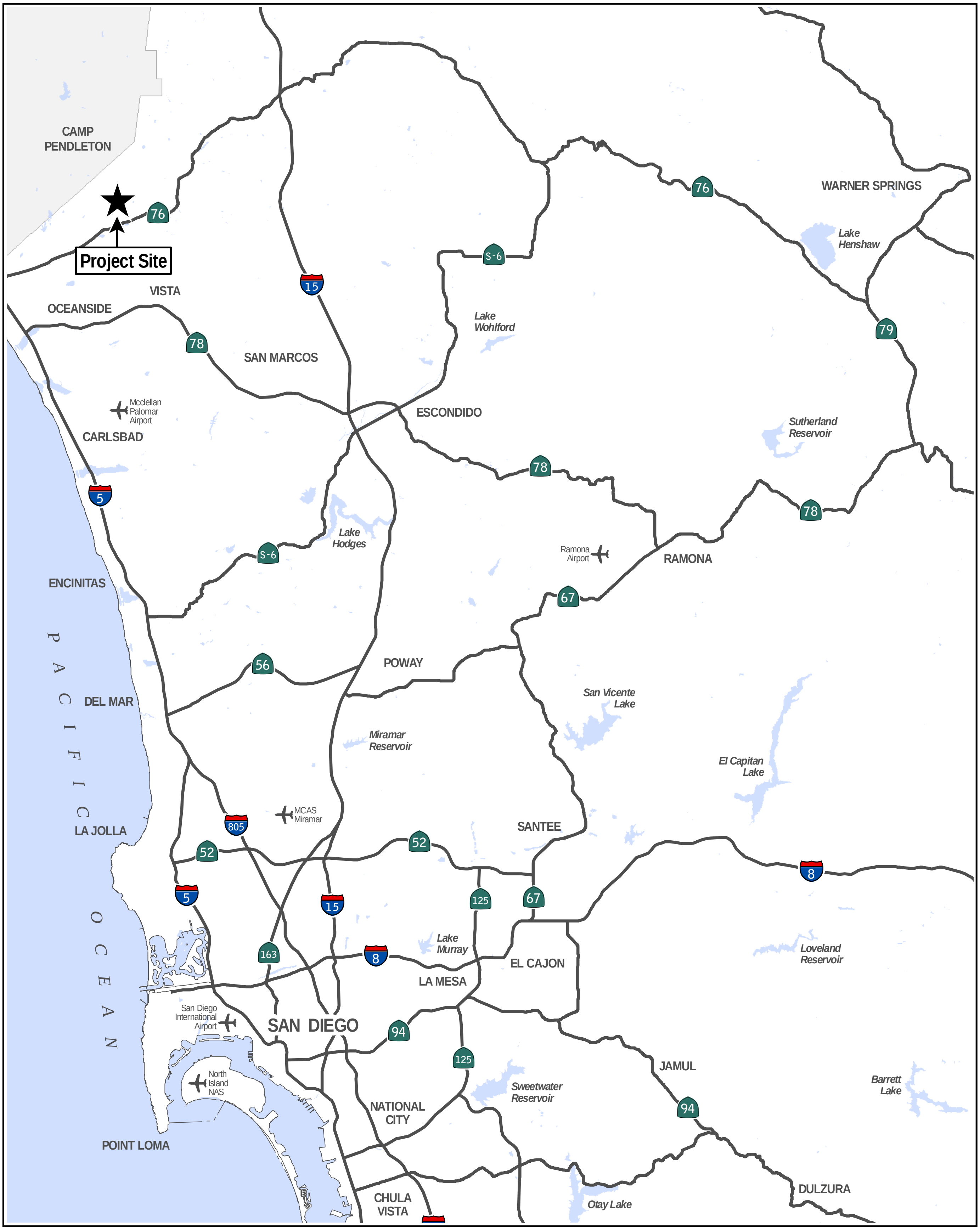

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R·E·C Consultants, Inc.

Regional Location

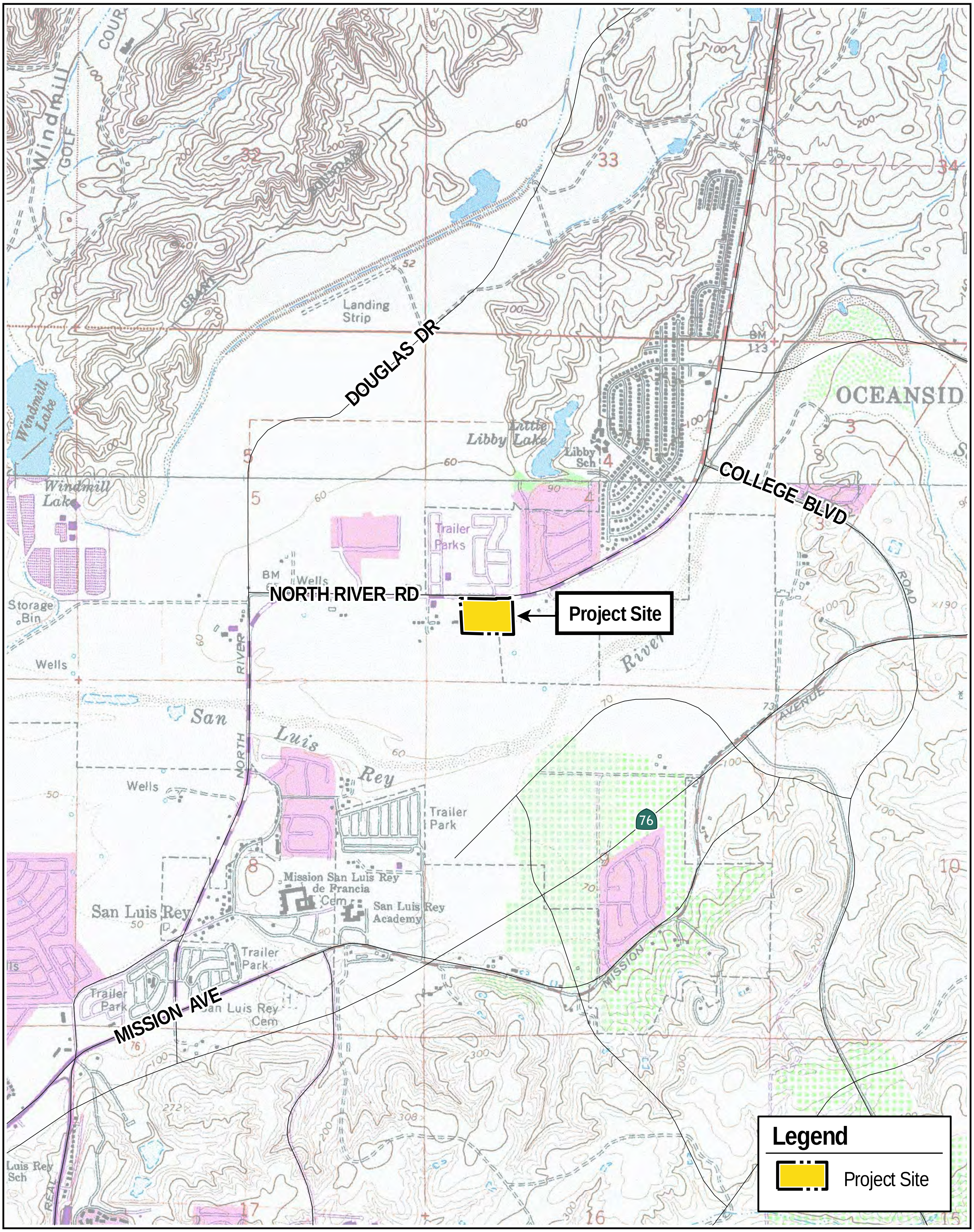
NORTH RIVER ROAD (KAWANO PROPERTY)

Miles 0 2.5 5

Source: ESRI Basemap

FIGURE 1

September 2016



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R·E·C Consultants, Inc.

Vicinity Map

NORTH RIVER ROAD (KAWANO PROPERTY)

Feet
0 1,000 2,000

Source: ESRI Basemap

FIGURE 2

September 2016

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R·E·C Consultants, Inc.

Aerial Photograph of Project Site

NORTH RIVER ROAD (KAWANO PROPERTY)

Aerial Source: Google Earth, March 2016

FIGURE 3

September 2016

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REC Consultants, Inc.

Biological Resources

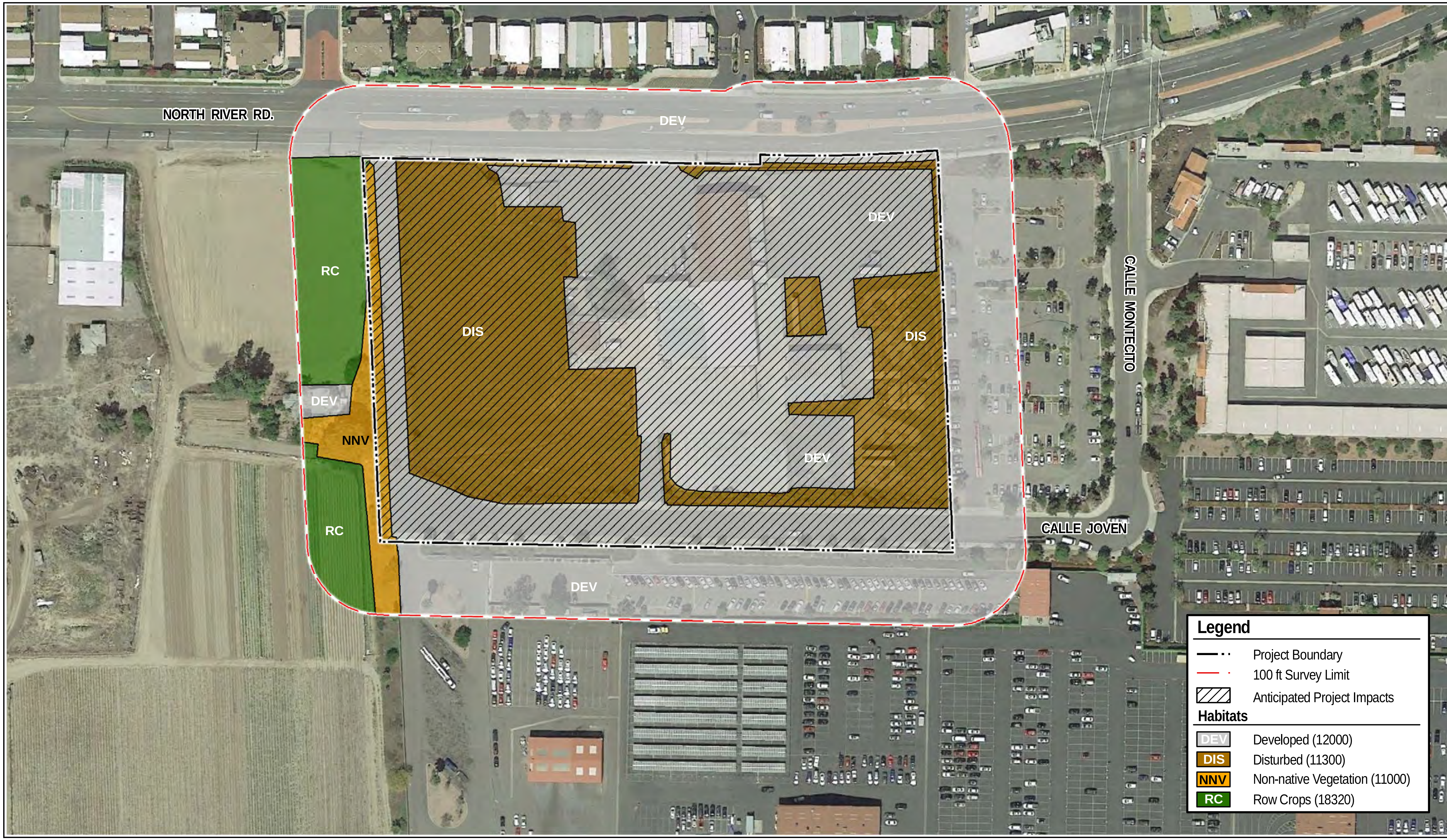
NORTH RIVER ROAD (KAWANO PROPERTY)

Feet 0 100 200

FIGURE 4

Aerial Source: Google Earth, March 2016

September 2016



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REC Consultants, Inc.

Project Impacts

NORTH RIVER ROAD (KAWANO PROPERTY)

Feet 0 100 200

FIGURE 5

Aerial Source: Google Earth, March 2016

September 2016

ATTACHMENT A

PLANTS OBSERVED ON THE NORTH RIVER ROAD (KAWANO PROPERTY) PROJECT SITE			
Species Name	**Common Name**	**Family**	**Habitat**
*Acacia cyclops**	Cyclops acacia	Fabaceae	NNV
Ambrosia acanthicarpa	annual bur-sage	Asteraceae	DIS
Ambrosia psilostachya	western ragweed	Asteraceae	DIS
*Arundo donax**	giant reed	Poaceae	DIS
*Atriplex semibaccata**	Australian saltbush	Chenopodiaceae	NNV
Baccharis pilularis subsp. consanguinea	chaparral broom, coyote brush	Asteraceae	DIS
Baccharis salicifolia subsp. salicifolia	mule-fat, seep-willow	Asteraceae	DIS
*Bromus madritensis subsp. rubens**	red brome, foxtail chess	Poaceae	DIS, NNV
*Bromus diandrus**	ripgut grass	Poaceae	NNV
*Carduus pycnocephalus subsp. pycnocephalus**	Italian thistle	Asteraceae	DIS
*Cedrus deodara**	Deodar cedar	Pinaceae	DEV
*Centaurea melitensis**	tocalote	Asteraceae	DIS
*Chenopodium album**	lamb's quarters	Chenopodiaceae	DIS, NNV
*Citrus x limon**	lemon	Rutaceae	DEV
*Cortaderia selloana**	Selloa pampas grass	Poaceae	DIS
*Cupaniopsis anacardioides**	carrotwood	Sapindaceae	DIS
*Distictis buccinatoria**	scarlet trumpet vine	Bignoniaceae	DIS
*Dysphania pumilio**	Tasmanian goosefoot	Chenopodiaceae	DIS
Erigeron sp.(*)	horseweed, fleabane	Asteraceae	DIS
*Erodium cicutarium**	red-stem filaree/storksbill	Geraniaceae	DEV, DIS
*Eucalyptus sp.**	eucalyptus	Myrtaceae	DIS
*Euphorbia maculata**	spotted spurge	Euphorbiaceae	DEV, DIS
Fabacae*	cultivated bean	Fabaceae	DEV
*Hedera helix**	English ivy	Araliaceae	DEV, DIS
Heliotropium curassavicum var. oculatum	salt heliotrope	Boraginaceae	DIS
Hesperocnide tenella	western nettle	Urticaceae	DIS
Heterotheca grandiflora	telegraph weed	Asteraceae	DIS
*Hirschfeldia incana**	short-pod mustard	Brassicaceae	DIS, NNV
*Jasminum sp.**	jasmine	Oleaceae	DIS
*Lactuca sativa**	lettuce	Asteraceae	DEV
*Marrubium vulgare**	horehound	Lamiaceae	DIS, NNV
*Myoporum parvifolium**	slender myoporum	Scrophulariaceae	DIS
*Myoporum laetum**	ngaio, mousehole tree	Scrophulariaceae	NNV
*Nerium oleander**	oleander	Apocynaceae	DIS
*Nicotiana glauca**	tree tobacco	Solanaceae	DIS
*Opuntia ficus-indica**	mission prickly-pear, Indian-fig	Cactaceae	DEV
*Plantago lanceolata**	English plantain, rib-grass	Plantaginaceae	DIS
*Portulaca oleracea**	common purslane	Portulacaceae	NNV
*Prunus sp.**	plum	Rosaceae	DEV
Pseudognaphalium biolettii	bicolor cudweed	Asteraceae	
*Ricinus communis**	castor bean	Euphorbiaceae	DIS, NNV
*Salsola tragus**	prickly Russian-thistle, tumbleweed	Chenopodiaceae	DIS
*Silybum marianum**	milk thistle	Asteraceae	DIS
*Sisymbrium irio**	London rocket	Brassicaceae	NNV
Solanum americanum	white nightshade	Solanaceae	DIS
*Sonchus oleraceus**	common sow-thistle	Asteraceae	DIS

ATTACHMENT A

Species Name	Common Name	Family	Habitat
Stephanomeria sp.	wreath-plant	Asteraceae	DIS
Symphyotrichum subulatum var. parvifolium	southwestern annual saltmarsh aster	Asteraceae	DIS
*Tamarix sp.**	tamarisk/salt-cedar	Tamaricaceae	DIS
*Urtica urens**	dwarf nettle	Urticaceae	DIS
*Washingtonia robusta**	Mexican fan palm	Arecaceae	DIS, NNV

* non-native
! State or Federal special-status (State endangered, threatened, or rare; Federal endangered, threatened, or candidate for listing; CRPR 1-4)

<u>Habitat Abbreviations</u>
DEV - Developed
DIS - Disturbed
NNV - Non-native Vegetation

ATTACHMENT B

ANIMALS OBSERVED ON THE NORTH RIVER ROAD (KAWANO PROPERTY) PROJECT SITE			
Species Name	**Common Name**	**Habitat**	**Number**
Invertebrates			
*Helix aspersa**	brown garden snail	DIS	shells
Family Agelenidae	funnel weaver spider	DIS	webs
Birds			
Charadrius vociferus vociferus	killdeer	DIS	flock (~20)
Sayornis saya	Say's phoebe	DIS	1
Sayornis nigricans semiater	black phoebe	DIS	1
Corvus brachyrhynchos hesperis	American crow	FO	1
Melospiza melodia	song sparrow	DIS	5
Mammals			
Spermophilus beecheyi nudipes	California ground squirrel	DIS	holes

* non-native

! State or federal special-status species (State endangered, threatened, endangered candidate, fully protected, watchlist, or CDF sensitive; or federal endangered, threatened, candidate for listing, or USFWS Bird of Conservation Concern)

Habitat Abbreviations

DIS - Disturbed
FO - Flyover

ATTACHMENT C

SPECIAL-STATUS PLANTS WITH THE POTENTIAL TO OCCUR ON THE NORTH RIVER ROAD (KAWANO PROPERTY) PROJECT SITE (USGS SAN LUIS REY QUAD, 21 - 23 METERS [70 - 77 FT])								
Species Name	**Common Name**	**Family**	**CRPR**	**State/ Federal**	**MHCP NE**	**Growth form, bloom time**	**Habitat**	**Potential to Occur Onsite**
Abronia maritima	red sand-verbena	Nyctaginaceae	4.2	-/-	-	Perennial herb, Feb-Nov	Coastal dunes; 0-100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	1B.1	-/BLM-S, USFS-S	-	Annual herb, Jan-Sep	Sandy chaparral, coastal scrub, desert dunes; 75-1600 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Acanthomintha ilicifolia	thornmint, San Diego thorn-mint	Lamiaceae	1B.1	SE/FT	X	Annual herb, Apr-Jun	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Endemic to active vertisol clay soils of mesas & valleys. Usually on clay lenses within grassland or chaparral communities. 10-960 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Acmispon prostratus (Lotus nuttallianus)	prostrate/Nuttall's acmispon (Nuttall's lotus)	Fabaceae	1B.1	-/-	X	Annual herb, Mar-Jul	Coastal dunes, sandy coastal scrub; 0-10 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Adolphia californica	spineshrub, California adolphia	Rhamnaceae	2B.1	-/-	-	Shrub (deciduous), Dec-May	From sandy/gravelly to clay soils within grassland, coastal sage scrub, or chaparral; various exposures. 45-740 m.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite; would have been detectable and was not observed.
Ambrosia pumila	San Diego ambrosia	Asteraceae	1B.1	-/FE	X	Perennial herb (rhizomatous), Apr-Oct	Sandy loam or clay soil, sometimes alkaline, in chaparral, coastal scrub, valley and foothill grassland. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools. 3-580 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Arctostaphylos glandulosa subsp. crassifolia	Del Mar manzanita, fe del mar manzanita	Ericaceae	1B.1	-/FE	X	Shrub (evergreen), Dec-Jun	Chaparral on sandy coastal mesas and ocean bluffs; 30-365 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.
Artemisia palmeri	Palmer's sagewort, San Diego sagewort	Asteraceae	4.2	-/-	-	Biennial to perennial herb to subshrub, Feb-Sep	Drainages and riparian areas in sandy soil within chaparral, coastal scrub, riparian forest, riparian woodland and riparian scrub. 15-915 m	Low; one individual observed on Nagata Property but suitable habitat does not occur onsite; would have been detectable and was not observed.
Asplenium vespertinum	western spleenwort	Aspleniaceae	4.2	-/-	-	Perennial herb (rhizomatous), Feb-Jun	Under overhanging rocks in rocky chaparral, cismontane woodland, coastal scrub. 180-1000 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Astragalus tener var. titi	coastal dune milkvetch	Fabaceae	1B.1	SE/FE	-	Annual herb, Mar-May	Sandy coastal bluff scrub, coastal dunes, coastal prairie (mesic); 1-50 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	1B.2	-/-	-	Perennial herb, Mar-Oct	Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland, also ridgetops and alkaline low places. 2-460 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Atriplex pacifica	south coast saltbush, south coast saltscale	Chenopodiaceae	1B.2	-/-	-	Annual herb, Mar-Oct	Alkali soils in coastal bluff scrub, coastal dunes, coastal scrub, playas. 1-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Baccharis vanessae	Encinitas baccharis	Asteraceae	1B.1	SE/FT	X	Shrub (deciduous), Aug-Nov	Steep, open, rocky areas with sandstone soils in maritime chaparral, cismontane woodland; 40-855 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite; would have been detectable and was not observed.
Bahiopsis laciniata (Viguiera l.)	San Diego sunflower, San Diego County viguiera	Asteraceae	4.2	-/-	-	Shrub, Feb-Aug	Slopes and ridges in chaparral and coastal scrub. 60-750 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Bloomeria clevelandii (Muilla c.)	San Diego goldenstar	Themidaceae	1B.1	-/BLM-S	X	Perennial herb (bulbiferous), Apr-May	Clay soil in chaparral, coastal scrub, valley & foothill grassland. Often on mounds between vernal pools in fine, sandy loam. 50-465 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Brodiaea filifolia	thread-leaf brodiaea	Themidaceae	1B.1	SE/FT	X	Perennial herb (bulbiferous), Mar-Jun	Dense Auld and Bosanko clay soils, most often associated with grassland but may occur within openings of other vegetation communities such as coastal sage scrub; 10-1020 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	1B.1	-/BLM-S, USFS-S	-	Perennial herb (deciduous, bulbiferous), May-Jul	Mesic, clay, sometimes serpentine soils in closed-cone coniferous forest, chaparral, cismontane woodland, meadows & seeps, valley & foothill grassland. Usually in vernal pools and small drainages. 30-1695 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Calandrinia breweri	Brewer's calandrinia	Montiaceae	4.2	-/-	-	Annual herb, Mar-Jun	Sandy or loamy disturbed or burned areas in chaparral, coastal scrub; 10-1220 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Cistanthe maritima	sea kisses, seaside cistanthe/calandrinia	Montiaceae	4.2	-/-	-	Annual herb, Feb-Aug	Sandy soils in coastal bluff scrub, coastal scrub, valley & foothill grassland; 5-300 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Camissoniopsis lewisii (Camissonia l.)	Lewis's evening-primrose	Onagraceae	3	-/-	-	Annual herb, Mar-Jun	Sandy or clay soil in cismontane woodland, coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland. 0-300 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Caulanthus simulans	Payson's caulanthus, Payson's jewel-flower	Brassicaceae	4.2	-/USFS-S	-	Annual herb, Feb-Jun	Sandy, granitic soils in chaparral, coastal scrub, burned or disturbed areas; steep, rocky slopes; 90-2200 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Ceanothus verrucosus	wart-stem-lilac, wart-stemmed ceanothus	Rhamnaceae	2B.2	-/-	-	Shrub (evergreen), Dec-May	Chaparral, rocky slopes; 1-380 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.
Centromadia parryi subsp. australis	southern tarplant	Asteraceae	1B.1	-/-	-	Annual herb, May-Nov	Marshes and swamps (margins), valley & foothill grassland (vernally mesic), vernal pools, disturbed areas; 0-975 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Centromadia pungens subsp. laevis	smooth tarplant	Asteraceae	1B.1	-/-	-	Annual herb, Apr-Sep	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley & foothill grassland, disturbed areas; 5-1170 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	1B.1	-/BLM-S	-	Annual herb, Jan-Aug	Sandy coastal bluff scrub, coastal dunes; 0-100 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Chamaebatia australis	southern mountain misery	Rosaceae	4.2	-/-	-	Shrub (evergreen), Nov-May	Gabbroic or metavolcanic chaparral; 300-1020 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite; would have been detectable and was not observed.
Chorizanthe orcuttiana	Orcutt's spineflower	Polygonaceae	1B.1	SE/FE	X	Annual herb, Mar-May	Sandy openings in maritime chaparral, closed-cone coniferous forest, and coastal scrub; 3-125 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Chorizanthe polygonoides var. longispina	knotweed spineflower, long-spined spineflower	Polygonaceae	1B.2	-/BLM-S	-	Annual herb, Apr-Jul	Gabbroic clay soils in chaparral, coastal scrub, meadows & seeps, valley & foothill grassland, near vernal pools. 30-1530 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Comarostaphylis diversifolia subsp. diversifolia	summer-holly	Ericaceae	1B.2	-/BLM-S	-	Shrub (evergreen), Apr-Jun	Chaparral, cismontane woodland; 30-945 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Convolvulus simulans	small-flower bindweed, small-flowered morning-glory	Convolvulaceae	4.2	-/-	-	Annual herb, Mar-Jul	Wet clay and serpentine ridges in chaparral openings, coastal scrub, valley & foothill grassland. 30-700 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Corethrogyne filaginifolia var. linifolia (TJM2 recognizes no varieties and includes this in C. filaginifolia)	Del Mar sand-aster	Asteraceae	1B.1	-/-	X	Perennial herb, May-Sep	Sandy soils in coastal bluff scrub, openings in maritime chaparral, and sandy coastal scrub; 15-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Cryptantha wigginsii	Wiggin's cryptantha	Boraginaceae	1B.2	-/-	-	Annual herb, Feb-Jun	Coastal scrub, often on clay soil, 20-275 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Deinandra paniculata (Hemizonia p.)	San Diego tarplant, paniculate tarplant	Asteraceae	4.2	-/-	-	Annual herb, Apr-Nov	Vernal pools and vernally mesic areas in coastal scrub, valley & foothill grassland; 25-940 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Dichondra occidentalis	western dichondra, western ponyfoot	Convolvulaceae	4.2	-/-	-	Perennial herb (rhizomatous), Jan-Jul	Sandy loam, clay and rocky soils in chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 50-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Dudleya blochmaniae subsp. blochmaniae	Blochman's dudleya	Crassulaceae	1B.1	-/-	-	Perennial herb, Apr-Jun	Coastal bluff scrub, chaparral, coastal scrub, valley & foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. 5-450 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Dudleya brevifolia (D. blochmaniae subsp. brevifolia)	short-leaf dudleya	Crassulaceae	1B.1	SE/-	X	Perennial herb, Apr-May	On Torrey sandstone in openings in maritime chaparral & coastal scrub; 30-250 m	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat and/or soils do not occur onsite.
Dudleya multicaulis	many-stem dudleya	Crassulaceae	1B.2	-/BLM-S, USFS-S	-	Perennial herb, Apr-Jul	Often clay soils in chaparral, coastal scrub, valley & foothill grassland; 15-790 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Dudleya variegata	variegated dudleya	Crassulaceae	1B.2	-/BLM-S	X	Perennial herb, Apr-Jun	Often rocky/gravelly or clay soils or on rock outcrops in grassland, openings in chaparral, cismontane woodland, coastal scrub, also near vernal pools or on mima mounds; 3-580 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Dudleya viscida	sticky dudleya	Crassulaceae	1B.2	-/USFS-S	-	Perennial herb, May-Jun	Rocky coastal bluff scrub, chaparral, coastal scrub, cliffs and banks; 10-550 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Eryngium aristulatum var. parishii	San Diego button-celery	Apiaceae	1B.1	SE/FE	-	Biennial to perennial herb, Apr-Jun	Mesic coastal scrub, valley & foothill grassland, vernal pools; 15-880 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Eryngium pendletonense (E. pendletonensis)	Pendleton button-celery	Apiaceae	1B.1	-/-	-	Perennial herb, Apr-Jun	Coastal bluff scrub, valley and foothill grassland, vernal pools/clay, vernally mesic; 15-110 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Euphorbia misera	cliff spurge	Euphorbiaceae	2B.2	-/-	-	Shrub, Dec-Aug	Coastal bluff scrub, coastal scrub/ rocky; 10-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.
Ferocactus viridescens	coast barrel cactus, San Diego barrel cactus	Cactaceae	2B.1	-/-	-	Perennial (stem succulent), May-Jun	Chaparral, coastal scrub, valley & foothill grassland, near vernal pools; 3-490 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Frankenia palmeri	Palmer's frankenia	Frankeniaceae	2B.1	-/-	-	Perennial herb, May-Jul	Coastal dunes, coastal salt marshes and swamps, playas; 0-10 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Githopsis diffusa subsp. filicaulis	Mission Canyon bluecup	Campanulaceae	3.1	-/USFS-S	-	Annual herb, Apr-Jun	Chaparral (mesic, disturbed areas); 450-700 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Harpagonella palmeri	Palmer's grappling-hook	Boraginaceae	4.2	-/-	-	Annual herb, Mar-May	Clay soils in chaparral, coastal scrub, valley & foothill grassland; 20-955 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Hazardia orcuttii	Orcutt's goldenbush, Orcutt's hazardia	Asteraceae	1B.1	ST/-	X	Shrub (evergreen), Aug-Oct	Grassy edges of maritime chaparral, coastal scrub, often clay soil; 80-85 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite; would have been detectable and was not observed.
Heterotheca sessiliflora subsp. sessiliflora	false goldenaster, beach goldenaster	Asteraceae	1B.1	-/-	-	Perennial herb, Mar-Dec	Sandy soils in coastal chaparral, coastal dunes, coastal scrub; 0-5 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Holocarpha virgata subsp. elongata	graceful tarplant	Asteraceae	4.2	-/-	-	Annual herb, May-Nov	Chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 60-1100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Hordeum intercedens	little barley, vernal barley	Poaceae	3.2	-/-	-	Annual herb, Mar-Jun	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; 5-1000 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Horkelia truncata	Ramona horkelia	Rosaceae	1B.3	-/-	-	Perennial herb, May-Jun	Clay or gabbroic soils in mixed chaparral, cismontane woodland, vernal streams, disturbed areas; 400-1300 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	1B.2	-/-	-	Shrub, Apr-Nov	Sandy, often disturbed areas in chaparral, coastal scrub; 10-135 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Iva hayesiana	San Diego marsh-elder	Asteraceae	2B.2	-/-	-	Perennial herb to subshrub, Apr-Oct	Marshes & swamps, playas, riverwashes; 10-500 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Juglans californica (J. c. var. californica)	Southern California black walnut	Juglandaceae	4.2	-/-	-	Tree (deciduous), Mar-Aug	Alluvial soils in chaparral, cismontane woodland, coastal scrub; 50-900 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Juncus acutus subsp. leopoldii	southwestern spiny rush	Juncaceae	4.2	-/-	-	Perennial herb, Mar-Jun	Coastal dunes (mesic), meadows & seeps (alkaline seeps), marshes and swamps (coastal salt); 3-900 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Lasthenia glabrata subsp. coulteri	Coulter's salt-marsh daisy, Coulter's goldfields	Asteraceae	1B.1	-/-	-	Annual herb, Feb-Jun	Alkaline soils in coastal salt marshes & swamps, playas, vernal pools; 1-1375 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Lepidium virginicum var. robinsonii (not recognized in TJM2)	Robinson's peppergrass	Brassicaceae	4.3	-/-	-	Annual herb, Jan-Jul	Dry chaparral, coastal scrub; 1-885 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Leptosyne maritima (Coreopsis m.)	San Diego sea-dahlia	Asteraceae	2B.2	-/-	-	Perennial herb, Mar-May	Coastal bluff scrub, coastal scrub; 5-185 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Lycium californicum	California desert thorn	Solanaceae	4.2	-/-	-	Shrub, Mar-Aug	Coastal bluff scrub, coastal scrub; 5-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite; would have been detectable and was not observed.
Microseris douglasii subsp. platycarpha	small-flower microseris	Asteraceae	4.2	-/-	-	Annual herb, Mar-May	Clay soils in cismontane woodland, coastal scrub, valley & foothill grassland, vernal pools; 15-1070 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite.
Mimulus diffusus (included in M. palmeri in TJM2)	Palomar monkey flower	Phrymaceae	4.3	-/-	-	Annual herb, Apr-Jun	Sandy or gravelly chaparral, lower montane coniferous forest; 1220-1830 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Monardella hypoleuca subsp. lanata	felt-leaf monardella	Lamiaceae	1B.2	-/-	-	Perennial herb to subshrub (rhizomatous), Jun-Aug	Sandy soil in understory of mixed chaparral, chamise chaparral, southern oak woodland; 300-1575 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Myosurus minimus (includes M. m. subsp. apus)	little mousetail	Ranunculaceae	3.1	-/-	X	Annual herb, Mar-Jun	Valley & foothill grassland, vernal pools (alkaline); 20-640 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Nama stenocarpa	mud nama	Boraginaceae	2B.2	-/-	-	Annual to perennial herb, Jan-Jul	Marshes & swamps (lake margins, riverbanks); 5-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Navarretia fossalis	spreading navarretia	Polemoniaceae	1B.1	-/FT	X	Annual herb, Apr-Jun	Chenopod scrub, marshes & swamps (shallow freshwater), playas, vernal pools; 30-655 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Nemacaulis denudata var. denudata	coast woolly-heads	Polygonaceae	1B.2	-/-	-	Annual herb, Apr-Sep	Coastal dunes; 0-100 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Nemacaulis denudata var. gracilis	slender woolly-heads, slender cottonheads	Polygonaceae	2B.2	-/-	-	Annual herb, Mar-May	Coastal dunes, desert dunes, Sonoran desert scrub; -50-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Nolina cismontana	Peninsular bear-grass, chaparral nolina	Ruscaceae	1B.2	-/-	-	Shrub (evergreen), Mar-Jul	Sandstone, shale or gabbro soils in chaparral, coastal scrub; 140-1275 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite; would have been detectable and was not observed.
Ophioglossum californicum	California adder's tongue	Ophioglossaceae	4.2	-/-	-	Perennial herb (rhizomatous), Dec-Jun	Mesic chaparral and valley & foothill grassland, vernal pools margins); 60-525 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Orcuttia californica	California Orcutt's grass	Poaceae	1B.1	SE/FE	X	Annual herb, Apr-Aug	Vernal pools; 15-660 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Orobanche parishii subsp. brachyloba	beach orobanche, short-lobe orobanche	Orobanchaceae	4.2	-/-	-	Perennial herb (parasitic), Apr-Oct	Sandy coastal bluff scrub, coastal dunes, coastal scrub; parasitic on shrubs, generally Isocoma menziesii; 3-305 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Pentachaeta aurea subsp. aurea	golden-ray pentachaeta	Asteraceae	4.2	-/-	-	Annual herb, Mar-Jul	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley & foothill grassland; 80-1850 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.
Phacelia stellaris	Brand's phacelia	Boraginaceae	1B.1	-/FC	-	Annual herb, Mar-Jun	Coastal dunes, coastal scrub; 1-400 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	4.3	-/-	-	Shrub (deciduous), May-Aug	Chaparral, cismontane woodland, riparian woodland; 100-1100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Quercus dumosa	Nuttall's scrub oak	Fagaceae	1B.1	-/-	-	Shrub (evergreen), Feb-Aug	Sandy soil near coast, clay loam soils in closed-cone coniferous forest, chaparral, coastal scrub; 15-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur onsite; would have been detectable and was not observed.
Quercus engelmannii	Engelmann/mesa blue oak	Fagaceae	4.2	-/-	-	Tree (deciduous), Mar-May	Chaparral, cismontane woodland, riparian woodland, valley & foothill grassland; 120-1300 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Selaginella asprella	bluish spike-moss	Selaginellaceae	4.3	-/-	-	Perennial herb (rhizomatous), Jul	Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest/granitic, rocky; 1600-2700 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur onsite.
Selaginella cinerascens	mesa spike-moss, ashy spike-moss	Selaginellaceae	4.1	-/-	-	Perennial rhizomatous herb	Chaparral and coastal scrub on undisturbed soil.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur onsite.

ATTACHMENT C

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Senecio aphanactis	California groundsel, chaparral ragwort	Asteraceae	2B.2	-/-	-	Annual herb, Jan-Apr	Chaparral, cismontane woodland, coastal scrub, sometimes alkaline; 15-800 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Stemodia durantifolia	blue streamwort, purple stemodia	Plantaginaceae	2B.1	-/-	-	Perennial herb, Jan-Dec	Sandy soil in riparian habitats, on wet sand or rocks, drying streambeds, mesic Sonoran desert scrub; 35-795 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Stipa diegoensis (Achnatherum diegoense)	San Diego needlegrass, San Diego County needle grass	Poaceae	4.2	-/-	-	Perennial herb, Feb-Jun	Rocky, often mesic areas in chaparral, coastal scrub; 10-800 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Suaeda esteroa	estuary sea-blite	Chenopodiaceae	1B.2	-/-	-	Perennial herb, May-Jan	Coastal salt marshes and swamps; 0-5 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite.
Suaeda taxifolia	woolly sea-blite	Chenopodiaceae	4.2	-/-	-	Shrub (evergreen), Jan-Dec	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt); 0-50 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	1B.2	-/-	-	Shrub, Apr-May	Rocky, decomposed gabbro soil in chaparral, coastal scrub; 165-1000 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur onsite; would have been detectable and was not observed.

Listing Designations

CRPR - California Rare Plant Rank (from Rare Plant Status Review Group, jointly managed by California Department of Fish and Wildlife [CDFW] and California Native Plant Society [CNPS])

1A - Plants presumed extirpated in California and either rare or extinct
1B - Plants rare, threatened or endangered in California AND elsewhere
2A - Presumed extirpated or extinct in California, but more common elsewhere
2B - Plants rare, threatened or endangered in California, but more common elsewhere
3 - Plants about which more information is needed - a review list
4 - Plants of limited distribution - a watch list
CBR - Considered But Rejected

.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of
.3 - Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

ATTACHMENT C

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite

State of California species designations (CDFW April 2013)
SE - State-listed Endangered
ST - State-listed Threatened
SR - State-listed Rare

Federal species designations (CDFW April 2013, USFWS 2013)
FE - Federally-listed Endangered
FT - Federally-listed Threatened
FC - Federal candidate for listing

MHCP NE - an X in this column indicates the species is considered a Narrow Endemic by the Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista (Final MHCP Vol. II 2003)

Other abbreviations:
TJM2 - The Jepson Manual, 2nd edition (2012) (taxonomic authority for this report except where it conflicts with special-status plant recognition)
(Common names are primarily from *The Checklist of Vascular Plants of San Diego County* [Rebman and Simpson 2006], and secondarily from CNPS's Inventory of Rare and Endangered Plants [CNPS 2010, 2013])

ATTACHMENT D

SPECIAL-STATUS ANIMALS WITH THE POTENTIAL TO OCCUR ON THE NORTH RIVER ROAD (KAWANO PROPERTY) PROJECT SITE (USGS SAN LUIS REY QUAD, 21 - 23 METERS [70 - 77 FT])					
Species Name	**Common Name**	**State/Federal Status**	**MHCP NE**	**Habitat**	**Potential to Occur Onsite**
INVERTEBRATES					
Branchinecta lynchi	vernal pool fairy shrimp	FP, WL, CDF-S/BLM-S, BCC	-	Vernal pools; only one occurrence documented in San Diego, a depression within coastal sage scrub in Oceanside.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Branchinecta sandiegonensis	San Diego fairy shrimp	-/FE	X	Vernal pools and other unvegetated ephemeral basins in Orange and San Diego Counties and Baja California. Habitat is typically < 30 cm deep and within 64 km of the Pacific Ocean. < 701 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Cicindela senilis frosti	senile tiger beetle	-/-	-	Coastal salt marshes, tidal mud flats, interior alkali mud flats; an inland site near Jacumba and Lake Elsinore.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Cicindela latesignata latesignata (C. l. obliviosa)	western beach tiger beetle (oblivious tiger beetle)	-/-	-	Coastal sea beaches, bays, estuaries, salt marshes, and alkali sloughs. Would be expected on salt flats only around estuaries etc., not inland. Possibly only extant in San Diego County.	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat does not exist on-site.
Danaus plexippus pop. 1	monarch butterfly - California overwintering population	-/USFS-S	-	Land with larval host plant, milkweed (Asclepias spp.), or nectar plants. Overwintering habitats limited to coastal conifer or eucalyptus groves.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Euphyes vestris harbisoni	Harbison's dun skipper	-/-	X	Drainages containing host plant San Diego sedge (Carex spissa) in San Diego and Orange Counties.	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat does not exist on-site.
Streptocephalus woottoni	Riverside fairy shrimp	-/FE	X	Vernal pools in grassland and coastal sage scrub in western Riverside, Orange and San Diego Counties (Ramona area), and coastal SD County. Does not appear until later in the season; may require warmer water or longer inundation times than Branchinecta sandiegonensis.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Tryonia imitator	mimic tryonia	-/-	-	Coastal lagoons, estuaries and salt marshes in permanently submerged areas, in a variety of sediment types, withstands wide range of salinity.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
FISH					
Eucyclogobius kristinae (E. newberryi)	tidewater goby	SSC/FE	-	Coastal lagoons, lower reaches of streams (fresh or brackish), vegetated pools in slow (not stagnant) areas of streams, and uppermost portions of large bays. Generally occurs in water 25-100 cm deep with mud substrate. Spawning occurs on coarse sand. Southern end of range is Agua Hedionda Lagoon in Carlsbad, San Diego.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Gila orcuttii	arroyo chub	SSC/USFS-S	-	Slow moving sections of streams with sand or mud substrate; also in headwaters, creeks, small-medium rivers, often intermittent streams; tolerant of low oxygen and wide temperature fluctuations; midwater and benthic. Southern end of native range is San Luis Rey River basin; introduced to San Diego River.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
AMPHIBIANS					
Anaxyrus californicus (Bufo microscaphus c.)	arroyo toad	SSC/FE	-	Washes, arroyos, sandy riverbanks, and riparian areas, especially with willows, cottonwoods and sycamores; needs exposed sandy streamsides with stable terraces for burrowing with scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding. 0-900 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Spea hammondii	western spadefoot	SSC/BLM-S	-	Grassland, also valley-foothill hardwood woodlands. Vernal pools essential for breeding and egg-laying. Activity limited to wet season, summer storms or during evenings with elevated substrate moisture levels; stays below ground in dry/cold weather. Nocturnal. Extirpated throughout much of lowland southern California.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
REPTILES					
Acinemys pallida (Emys marmorata, Clemmys m. p.)	western pond turtle	SSC/BLM-S, USFS-S	-	Permanent waters with aquatic vegetation; can occur in urban conditions and brackish water. Nests in sand or grassy open fields up to 0.5 km from water. < 1850 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Aspidoscelis hyperythra (beldingi) (A. hyperythrus b.)	orange-throated whiptail (Belding's)	SSC/USFS-S	-	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats; prefers sandy areas with perennial plants that support termites.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Aspidoscelis tigris stejnegeri	coastal whiptail	-/-	-	Found in hot, dry open areas with sparse vegetation; also woodland and riparian areas mostly west of the Peninsular Ranges; ground may be firm soil, sandy, or rocky.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Crotalus ruber	red-diamond rattlesnake	SSC/USFS-S	-	Coastal San Diego County to the eastern slopes of Peninsular Ranges in coastal sage scrub, mixed chaparral, open grassy areas and agricultural areas, chamise chaparral, pinon juniper and desert scrub. Most common in the western foothills of the Peninsular Ranges and in dry rocky inland valleys; associated with granite rock outcroppings, especially in winter. 0-1500 m (typically < 1200m)	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Diadophis punctatus similis	San Diego ringneck snake	-/USFS-S	-	Moist habitats including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands, along coast into Peninsular Ranges. Prefer areas with surface litter or herbaceous vegetation. Often found near abandoned buildings and junk piles in wooded areas. Generally hidden during the day. May not be distinct from San Bernardino subspecies (D. p. modestus), which is also special-status.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Lichanura orcuttii (Charina trivirgata, C. t. ruseofusca)	rosy boa	-/USFS-S	-	Desert, arid scrub, brushland, sandy plains, rocky slopes, and chaparral-covered foothills, particularly where moisture is available (not dependent on permanent water). Associated with rock outcrops; most active at night. 0-2070 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Phrynosoma blainvillii (P. coronatum b.)	coast horned lizard	SSC/BLM-S	-	Coastal scrub, chaparral, grassland, cismontane woodland, riparian scrub and woodland; most common in lowlands along sandy washes with scattered low shrubs. Prefers open areas for sunning with loose soil for burial and native harvester ant colonies (few or no Argentine ants).	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Plestiodon skiltonianus interparietalis (Eumeces s. i.)	Coronado Island skink	SSC/BLM-S	-	Rocky areas and dry hillsides in coastal sage scrub, grassland, chaparral, pinyon-juniper woodland, open pine or oak woods, near streams; digs burrows in soil.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Salvadora hexalepis virgultea	coast patch-nosed snake	SSC/-	-	Chaparral, coastal sage scrub, and other brushy vegetation west of desert, near rock outcrops with adjacent seasonal drainages; require small mammal burrows for refuge and overwintering.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Thamnophis hammondii	two-striped garter snake	SSC/BLM-S, USFS-S	-	In or near permanent fresh water, often along streams with rocky beds bordered by willows and other riparian vegetation, also desert oases and sometimes vernal pools. 0-2100 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Thamnophis sirtalis subsp. novum (alternate classification for SD's T. s. infernalis)	south coast garter snake	SSC/-	-	Marsh and upland habitats near permanent fresh water with good strips of riparian vegetation; currently only known in San Pasqual Valley in SD County.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
BIRDS					
Accipiter cooperii	Cooper's hawk	WL/-	-	Open riparian cottonwood and sycamore, oak, and eucalyptus woodland and other open forested areas. Nests in second-growth conifer stands, live oaks or deciduous riparian areas. Forages in openings near forested areas. Similar winter habitat, but open woodlands and fields may be used more. 150-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Agelaius tricolor	tricolored blackbird	SSC/BCC, BLM-S	-	Highly colonial; require open water, protected nesting substrate, and foraging area with insect prey within a few km of colony. Breed and nest in freshwater marshes with emergent vegetation but also in thickets of willow, blackberry, wild rose, tall herbs. In migration and winter inhabit open cultivated lands and pastures as well as marshes. 0-150 m and 300-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	WL/-	-	Steep, moderately vegetated slopes of coastal sage scrub dominated by Artemisia californica but also coastal bluff scrub and chaparral. Nests on the ground at the base of rocks, grass tufts, or saplings, or slightly above ground in the branches of shrubs or trees. 0-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Aquila chrysaetos (canadensis)	golden eagle	FP, WL, CDF-S/BLM-S, BCC	-	Rolling foothills, mountain areas, sage-juniper flats, desert with sufficient mammalian prey base and near suitable nesting sites. Nest on rock ledges of cliffs but sometimes in large trees (e.g., oak or eucalyptus), on steep hillsides, or on the ground. 0-915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Artemisiospiza belli belli (Amphispiza b. b.)	Bell's sage sparrow	WL/BCC	-	Year-round resident in open chamise chaparral and sage scrub, especially recently burned areas or on gabbro substrate; most common in central southern SD County; very sensitive to habitat fragmentation.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Buteo swainsoni	Swainson's hawk	ST/ BCC, BLM-S	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. Relatively tolerant of human activity. 0-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	SSC/BCC, USFS-S	X	Open coastal sage scrub with thickets of chollas (Cylindropuntia sp.), south- and west-facing slopes below 460 m, usually within 400 m of river valleys, also hillsides in tributary canyons, along washes, and in very open woodland of coast live oak and California sycamore.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Charadrius nivosus (nivosus) (C. alexandrinus n.)	western snowy plover	SSC/FT, BCC	-	Immediate coast at scattered beach, bay and lagoon locations; nests on beaches, dunes and salt flats.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Circus cyaneus	northern harrier	SSC/-	-	Marshes, grasslands, agricultural lands, sagebrush flats, and desert sinks. Nests on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas; forages over grasslands. Year-round resident but more common in winter.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	SE/FT, BCC, BLM-S, USFS-S	-	Forests, woodland, and scrub. Breeds in deciduous riparian woodland, especially dense stands of cottonwood and willow, sometimes mesquite and tamarisk. Dense riparian understory foliage important for nesting (e.g. blackberry, nettles, wild grape), and cottonwood important for foraging habitat.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Elanus leucurus (majusculus) (E. caeruleus)	white-tailed kite	FP/BLM-S	-	Widespread over coastal slope, prefers riparian woodlands, oak groves, or sycamore groves adjacent to grassland; feeds almost exclusively on California vole.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Empidonax traillii extimus	southwestern willow flycatcher	SE/FE	-	Riparian and wetland thickets of willow or tamarisk, does not need to be extensive. Nests in trees or shrubs with dense vegetation. Forages within and occasionally above dense riparian vegetation. Present in California from late April to September.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Eremophila alpestris actia	California horned lark	WL/-	-	Open patches of bare land alternating with low vegetation in grasslands, montane meadows, sagebrush and open coastal plains, fallow grain fields, and alkali flats.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Icteria virens (auricollis)	yellow-breasted chat	SSC/-	-	Summer visitor in dense riparian woodland. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground. Most common in coastal lowland, strongly concentrated in NW corner of County; usually return to SD second week in April and start to leave by early August.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Ixobrychus exilis (exilis)	least bittern	SSC/BCC	-	Nest colonially in dense, tall growths of emergent vegetation (e.g. cattail, sedge, bulrush, or common reed) interspersed with some woody vegetation and open, fresh or brackish water.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Laterallus jamaicensis coturniculus	California black rail	ST, FP/BCC, BLM-S	-	Freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Passerculus guttatus beldingi (P. sandwichensis b.)	Belding's savannah sparrow	SE/-	-	Coastal salt marshes in southern California and northern Baja California. Nests on the ground in natural depression or scrape, primarily in pickleweed (Salicornia virginica) habitat at the higher levels of the marsh, above the reach of the highest spring tides.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Plegadis chihi	white-faced ibis	WL/-	-	Shallow freshwater marsh; nest in dense tule thickets with areas of shallow water for foraging.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Polioptila californica californica	coastal California gnatcatcher	SSC/FT	-	Obligate, permanent resident of coastal sage scrub especially where Artemisia californica dominates; up to 915 m but 90% at 305 m or lower.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Rallus longirostris levipes	light-footed clapper rail	SE, FP/FE	-	Year-round resident in coastal salt marsh dominated by cordgrass and pickleweed, and also known at three freshwater sites in SD County.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Riparia riparia (riparia)	bank swallow	ST/BLM-S	-	Coastal sage scrub, riparian and freshwater marsh; colonial nester, requires vertical banks or cliffs with fine-textured soils, near streams, rivers, lakes, or ocean to dig nest holes.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Setophaga aestiva (Dendroica petechia brewsteri, S. p.)	yellow warbler	SSC/BCC	-	Riparian forest/scrub/woodlands in close proximity to water. Nest and forage in willow shrubs and thickets, and in other riparian plants including cottonwoods and sycamores. In migration and winter, often occur in open woodland, agicultural lands, brushy areas, and forest edges.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Sternula antillarum browni	California least tern	SE, FP/FE	-	Coastal; nest colonially up to 4 mi inland on bare or sparsely vegetated sand beaches, alkali flats, land fills, paved areas. Usually nest in same area in successive years; tend to return to natal site to nest.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Vireo bellii pusillus	least Bell's vireo	SE/FE	-	Summer resident in riparian vegetation along rivers and larger creeks, also dry river bottoms, with both riparian canopy and a somewhat dense or shrubby understory for nesting. 0-610 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
MAMMALS					

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Antrozous pallidus (pacificus or pallidus)	pallid bat	SSC/BLM-S, USFS-S	-	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, desert wash and desert scrub; often near rocky outcrops and water. Roost in rock crevices or buildings, less often in caves, tree hollows, mines etc. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Chaetodipus californicus femoralis	Dulzura pocket mouse	SSC/-	-	Coastal sage scrub, mixed chaparral, oak woodland, chamise chaparral, and mixed conifer habitats; attracted to grass-chaparral edges. 0 to over 915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC/-	-	Sandy, herbaceous areas, usually associated with rocks or coarse gravel, in coastal scrub, chaparral, grasslands, sagebrush in western San Diego County; nocturnal.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Choeronycteris mexicana	Mexican long-tongued bat	SSC/-	-	Deep mountain canyons with dense riparian vegetation. Roost in caves, rock fissures, and old mines. Found in residential areas, roosts in garages, sheds, porches, and under houses on stilts; feeds on pollen and nectar, especially of agaves and columnar cacti, and will visit hummingbird feeders and possibly avocado flowers; seen in fall and winter, presumed to not breed in CA.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Corynorhinus townsendii (pallescens)	Townsend's big-eared bat	STC, SSC/BLM-S, USFS-S	-	Wide variety of habitats, but often mesic habitats characterized by coniferous and deciduous forests, also grass and shrubland. All six known maternity colonies in coastal California are in old buildings or in a cave-like feature of a bridge. Roosts in the open, hanging from walls and ceilings. Extremely sensitive to human disturbance.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Dipodomys stephensi	Stephens' kangaroo rat	ST/FE	-	Prefers annual grassland but uses coastal sage scrub with sparse shrub cover; commonly associated with Artemisia californica, Eriogonum fasciculatum and Erodium cicutarium. Terrain is often flat or gently rolling with loose, friable, well-drained soil (generally at least 0.5 m deep). May recolonize abandoned agricultural land. San Jacinto Valley south to Warner Ranch; nocturnal.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Eumops perotis californicus	western mastiff bat	SSC/BLM-S	-	Conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban. Roost in crevices in cliff faces, high buildings, trees, and tunnels. 150-915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Lasiurus xanthinus	western yellow bat	SSC/-	-	Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats; increasingly, year-round in urban areas in planted palms; roosts in hanging palm fronds; forages over water and among trees for insects.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Leptonycteris yerbabuenae	lesser long-nosed bat	-/FE	-	Arid grasslands and shrublands. Roost in old mines and caves at the base of mountains near alluvial fans vegetated with food plants (agave, yucca, saguaro, and organ pipe cactus).	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Lepus californicus californicus (L. c. bennettii)	San Diego black-tailed jackrabbit	SSC/-	-	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, mixed conifer, and closed cone forest and open areas. Common in irrigated pastures and row crops. 0-915+ m.	Low; at least one CNDDB occurrence documented in Project quad but no suitable habitat occurs on-site.
Myotis yumanensis (saturatus)	Yuma myotis	-/BLM-S	-	Riparian, desert scrub, open woodlands and forests, but closely tied to bodies of water. Nursery colonies in buildings, caves and mines, and under bridges.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Neotoma lepida intermedia	San Diego desert woodrat	SSC/-	-	Coastal sage scrub, oak woodlands and chamise chaparral; moderate to dense canopies preferred. Particularly abundant in rock outcrops, rocky cliffs and slopes. Nocturnal. Associated with cacti. 150-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Nyctinomops femorosaccus	pocketed free-tailed bat	SSC/-	-	Pine-juniper woodlands, desert scrub, palm oases, desert wash, desert riparian; associated wth rugged canyons, high cliffs, and rock outcroppings. Roost in rock crevices and caves during the day; may also roost in buildings or under roof tiles. Winter habits poorly known.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Perognathus longimembris pacificus	Pacific pocket mouse	SSC/FE	X	Coastal sage scrub and grasslands with fine-grain, sandy substrates; historically inhabited coastal dunes, river alluvium, and sage scrub habitats on marine terraces within approximately 4 km of the ocean; 0-150 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Taxidea taxus (berlandieri or jeffersonii)	American badger	SSC/-	-	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Perfers open areas and may also frequent brushlands with little groundcover. Fossorial; requires burrowing rodents as prey.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

Listing Designations

Federal Listing (USFWS 2015, CDFW 2015)
FE - Federal-listed Endangered
FT - Federal-listed Threatened
FC - Federal candidate for listing
BCC - US Fish and Wildlife Service Bird of Conservation Concern
BLM-S - Bureau of Land Management Sensitive
USFS-S - US Forest Service Sensitive

State Listing (CDFW 2015, 2015)
SE - State-listed Endangered
ST - State-listed Threatened
STC - State Threatened Candidate
SEC - State Endangered Candidate
FP - CA Dept. of Fish and Wildlife Fully Protected
SSC - State Species of Special Concern
WL - CA Dept. of Fish and Wildlife Watch List
CDF-S - CA Dept. of Forestry Sensitive

MHCP NE - an X in this column indicates the species is considered a Narrow Endemic by the Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista (Final MHCP Vol. II 2003)

ATTACHMENT E
North River Road (Kawano Property) Project Site Photographs, December 2015

View southwest of western disturbed land

View southwest of developed land

APPENDIX H
BIOLOGICAL RESOURCES LETTER REPORT – WESTERN PARCEL

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September 15, 2021

Dan Niebaum
The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008

Subject**: Biological Resources Letter Report for the 15.91-acre North River Road (Nagata Property) Project Site, Oceanside, California; APN 157-060-17-00; Prepared for the City of Oceanside**

Mr. Niebaum:

REC Consultants, Inc. has prepared this letter report to address potential impacts of the proposed project to biological resources on a 15.91-acre parcel located in the City of Oceanside.

SUMMARY

The North River Road (Nagata Property) Project (Project) located within the City of Oceanside proposes a General Plan Amendment and Zone Amendment to prepare the Project site for future residential development. REC Consultants, Inc. conducted a survey on this parcel to document biological resources on the site. The undeveloped portions of the parcel contain disturbed land, non-native vegetation and row crops; no naturally occurring special-status species were detected or have moderate to high potential to occur onsite. Impacts to these habitats are not considered significant and would not require mitigation.

INTRODUCTION, PROJECT DESCRIPTION, LOCATION, SETTING

Project Description

The Project proposes a General Plan Amendment and Zone Amendment for the property located at 4617 North River Road to allow for future residential development of the site. The property is currently designated as Light Industrial (LI) under the City's General Plan and as Limited Industrial under the Zoning Ordinance. This proposal would re-designate the property as Medium Density - C Residential (MDC-R) under the General Plan and as Medium Density Residential C (RM-C) under the Zoning Ordinance.

Development of the site is not being proposed at this time, but in order to determine Project impacts and mitigation, this report assumes that all of the land within the parcel boundaries would be developed in the future. Actual impacts may differ once a site plan has been created for this Project.

Project Location and Setting
The approximately 15.91-acre Project site (Site) is located within the City of Oceanside north of the San Luis Rey River (**Figures 1** and **2**). The Site is bordered by North River Road to the north, undeveloped land and then the San Luis Rey River to the south, industrial development to the east, and residential development to the west (**Figure 3**).

Onsite elevation ranges from approximately 66 feet (20 meters) above mean sea level (AMSL) to 72 feet (22 meters) AMSL. According to the Web Soil Survey (USDA 2015), soil on the Site is comprised of Tujunga sand, 0-5% slopes on the northern half of the Site and Visalia sandy loam, 0-2% slopes on the southern half. However, because much of the Site is disturbed or in active agricultural use, it is unlikely that these soils exist onsite as mapped.

Regional Context
The incorporated City of Oceanside (City) is the third largest city in San Diego County and contains the San Luis Rey River. The City is included in the Multiple Habitat Conservation Program and uses the *Oceanside Subarea Habitat Conservation Plan/Natural Communities Conservation Plan* (Plan) to address how the City will conserve natural biotic communities and sensitive plant and wildlife species. According to the "Preserve Planning Map and Habitat Conservation Overlay Zones" figure of this Plan, the Site is not within the Wildlife Corridor Planning Zone, the Coastal Zone, or the boundaries of any Pre-Approved Mitigation Area; however, the Site is within the Offsite Mitigation Zone. (City of Oceanside 2010)

HABITATS / VEGETATION COMMUNITIES

Existing biological resources on the Site were investigated through a field survey and records review. Literature review consisted of a search and review of California Natural Diversity Data Base (CNDDB) records of rare and special-status plant and animal species within the Project USGS 7.5' quadrangle (San Luis Rey) and surrounding quadrangles (Las Pulgas Canyon, Morro Hill, Bonsall, Oceanside, San Marcos, Encinitas and Rancho Santa Fe), recent and historical aerial photographs of the site and surrounding areas, and soil maps and descriptions from the Soil Survey, San Diego Area, California (USDA 1973, USDA 2016).

One general survey was conducted by REC Field Biologist Lee BenVau; see Table 1 for details.

Table 1. Surveys Conducted on the Project Site

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
12/11/15	11:10 AM - 12:40 AM	58-64	Broken clouds (recently rained) to sunny with scattered clouds	0-2, 4-7	General	Lee BenVau

Plant species were identified in the field or collected for later identification, and wildlife species were identified directly by sight or vocalizations and indirectly by scat, tracks, or burrows. Field notes were maintained throughout the survey; all observed plant and animal species were recorded, and habitats and special-status species were mapped. Habitats within a 100-foot perimeter around the site were observed from the Site or public roadways. Mapping of biological resources on the Site was conducted on an aerial image scaled at approximately 1 inch = 120 feet.

Vegetation communities and land cover classification in this report follow Holland (1986) as updated by Oberbauer et al. (2008). Plant taxonomy and nomenclature in this report follow the Jepson eFlora (Jepson 2016) and the Jepson Manual, second edition (Baldwin et al. 2012) for taxonomy and scientific names, and Rebman and Simpson (2014) for common names, with some rare plant common names from the California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2016). Wildlife taxonomy and nomenclature in this report follow *Mammal Species of the World* (Wilson and Reeder 2005) for mammals, Avibase (Lepage 2015) for birds, California Herps (Nafis 2015) for reptiles and amphibians, Butterflies of America (Warren et al. 2015) for butterflies, BugGuide (ISUDE 2015) for other insects and arachnids, and the Integrated Taxonomic Information System (ITIS 2015) for other invertebrates, as well as the San Diego Natural History Museum mammal, bird, reptile, amphibian, butterfly, and spider checklists for localized subspecies information (SDNHM 2005, 2002, and undated).

General Survey Results

During REC's site survey, five habitats/land cover categories were observed onsite: developed land, disturbed land, non-native grassland, non-native vegetation, and row crops. These are shown in **Figure 4** and discussed below.

Developed land (Habitat Code 12000) occupies approximately 1.44 acres onsite. This land cover category consists of "Areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that require irrigation. Areas where no natural lands is evident due to a large amount of debris or other materials being placed upon it may also be considered urban/developed (e.g. car recycling plant, quarry)." Developed land is typically unvegetated or landscaped with a variety of ornamental (usually non-native) plants. (Oberbauer et al. 2008)

Developed land onsite consists of a residence, warehouse and associated parking areas.

No plant or wildlife species were observed on or over developed land onsite.

Disturbed land (Habitat Code 11300) occupies approximately 2.13 acres onsite. This land cover category is comprised of "Areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, but continues to retain a soil substrate. Typically vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed habitat include areas that have been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e. dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." (Oberbauer et al. 2008)

Disturbed land onsite is characterized by largely bare ground with dirt mounds and farm equipment. It is not dominated by any species or group of species but contains non-native species such as giant reed (*Arundo donax*), flax-leaf fleabane (*Erigeron bonariensis*), English plantain (*Plantago lanceolata*) and puncture vine (*Tribulus terrestris*) as well as native species such as western jimson weed (*Datura wrightii*), telegraph weed (*Heterotheca grandiflora*), coast prickly-pear (*Opuntia littoralis*), western cottonwood (*Populus fremontii* subsp. *fremontii*) and blue elderberry (*Sambucus nigra* subsp. *caerulea*).

Wildlife species detected on disturbed land consisted only of two bird species: song sparrow (*Melospiza melodia*) and mourning dove (*Zenaida macroura marginella*).

<u>Non-native Vegetation (Habitat Code 11000)</u> occupies approximately 0.40 acre onsite. This habitat category is "Characterized by predominantly non-native species introduced and established through human action. These areas are not typically artificially irrigated, but receive water from precipitation or runoff" (Oberbauer et al. 2008).

Onsite non-native vegetation is characterized by non-native tree and shrub species such as cyclops acacia (*Acacia cyclops*), bougainvillea (*Bougainvillea* sp.), sweet orange (*Citrus x sinensis*), ngaio (*Myoporum laetum*), olive (*Olea europaea*), and pomegranate (*Punica granatum*). Native species observed in this habitat include Douglas mugwort (*Artemisia douglasiana*), western sycamore (*Platanus racemosa*), and bicolor cudweed (*Pseudognaphalium biolettii*).

No wildlife species were observed on or over non-native vegetation onsite.

<u>Row Crops (Habitat Code 18320)</u> occupy approximately 11.82 acres onsite. This habitat is "Comprised of annual and perennial crops grown in rows with open space between rows. Species composition frequently changes by season and year. Row crops often occur in floodplains or upland areas with high soil quality. Row crops are nearly always artificially irrigated." (Oberbauer et al. 2008)

Onsite row crops consisted of watermelon (*Citrullus lanatus* var. *citroides*), cantaloupe (*Cucumis melo* var. *cantalupo*) and broccoli (Italica Group). Other non-native species observed growing around the row crops included short-pod mustard (*Hirschfeldia incana*), castor bean (*Ricinus communis*), white-stem filaree (*Erodium moschatum*), and common sow-thistle (*Sonchus oleraceus*). The fringes of vegetation on the west and south sides of the row crops were included as part of this habitat because the vegetation only occurs in a narrow strip directly adjacent to the row crops. Further, this vegetation is characterized by species whose survival is likely dependent on continued irrigation of the row crops such as mule-fat (*Baccharis salicifolia* subsp. *salicifolia*) and arroyo willow (*Salix lasiolepis*). It is likely that if irrigation were to cease, this fringe of vegetation would revert to the non-native grassland observed just to the south. Other native species that occur in this fringe of vegetation include coastal sagebrush (*Artemisia californica*), coyote brush (*B. pilularis* subsp. *consanguinea*), broom baccharis (*B. sarothroides*), and lemonadeberry (*Rhus integrifolia*).

Complete lists of plant and animal species detected onsite are provided in **Attachments A** and **B**, respectively.

SPECIAL-STATUS SPECIES

For the purposes of this report, a sensitive or special-status plant or animal is any taxon (species, subspecies, or variety) that is officially listed by California or the federal government as Endangered, Threatened, or Rare, or a candidate for one of those listings; classified as Fully Protected, Species of Special Concern, or Watch List animal species by the California Department of Fish and Wildlife (CDFW); included in California Rare Plant Ranks (CRPR) 1 through 4; or included in the City of Oceanside Narrow Endemics list.

Lists of special-status plants and animals with the potential to occur on the Site were generated from the CNDDB RareFind5 database. The resulting lists include any special-status species documented within Site's USGS 7.5' quadrangle or surrounding quadrangles. **Attachment C** provides information on these special-status plant species, as well as an evaluation of the potential for each species to occur onsite, based on CNDDB, the CNPS Inventory of Rare and Endangered Plants (on-line version, 2013), Reiser's *Rare Plants of San Diego County* (2001), professional botanical experience, and field observations. **Attachment D** provides information on these animal species, and an evaluation of the potential for each species to occur onsite, based on species requirements, CNDDB search results, and field observations.

Special-status Species Observed on the Project Site

One special-status species was observed onsite: Torrey pine (*Pinus torreyana*). However, this species is often used for landscaping and the Site is well outside of its natural range. Thus, the two individuals onsite by the residence and three individuals just offsite by the property's southeast corner are assumed to have been planted.

Special-status Species with Moderate to High Potential to Occur on the Project Site

Based on CNDDB records searches in the Project quadrangle and evaluation of current Site conditions, no species have moderate or high potential to occur onsite.

Narrow Endemic Species

The City of Oceanside has designated 16 plant and 6 animal species as narrow endemics. No narrow endemic species are expected to occur onsite; see Tables 2 and 3 below for explanation.

Table 2. Narrow Endemic Plant Species and Potential to Occur on the Project Site

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Acanthomintha ilicifolia	San Diego thornmint	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Ambrosia pumila	San Diego ambrosia	No	Not expected; known to occur in Project quad and marginally suitable habitat occurs onsite but onsite *Ambrosia* was identified as *A. psilostachya*.
Arctostaphylos glandulosa subsp. *crassifolia*	Del Mar manzanita	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite and would have been detectable and was not observed.
Baccharis vanessae	Encinitas baccharis	No	Not expected; not known to occur in Project quad and suitable habitat and soil does not occur onsite; onsite *Baccharis* identified as *B. pilularis* subsp. *consanguinea* and *B. salicifolia* subsp. *salicifolia*.

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Brodiaea filifolia	Thread-leaved brodiaea	No	Not expected; known to occur in Project quad but suitable soils do not occur onsite.
Chorizanthe orcuttiana	Orcutt's spineflower	No	Not expected; not known to occur in Project quad and suitable habitat does not occur onsite.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	No	Not expected; known to occur in Project quad and marginally suitable habitat occurs onsite but would have been detectable and was not observed.
Dudleya blochmaniae var. *brevifolia*	Short-leaved dudleya	No	Not expected; not known to occur in Project quad or surrounding quads and suitable soil does not occur onsite.
Dudleya variegata	Variegated dudleya	No	Not expected; not known to occur in Project quad and suitable soil and habitat do not occur onsite.
Eryngium aristulatum var. *parishii*	San Diego button-celery	No	Not expected; known to occur in Project quad, but vernal pools do not occur onsite.
Hazardia orcuttii	Orcutt's hazardia	No	Not expected; known to occur in Project quad but suitable soil and habitat do not occur onsite.
Lotus nuttallianus	Nuttall's lotus	No	Not expected; known to occur in Project quad but suitable habitat does not occur onsite.
Muilla clevelandii	San Diego goldenstar	No	Not expected; known to occur in Project quad but suitable soil does not occur onsite.
Myosurus minimus subsp. *apus*	Little mousetail	No	Not expected; known to occur in Project quad but vernal pools do not occur onsite.
Navarretia fossalis	Spreading navarretia	No	Not expected; known to occur in Project quad but vernal pools do not occur onsite.
Orcuttia californica	California Orcutt grass	No	Not expected; not known to occur in Project quad and vernal pools do not occur onsite.

Table 3. Narrow Endemic Animal Species and Potential to Occur on the Project Site

Scientific Name	Common Name	Observed Onsite	Rationale to Expect or Not Expect Onsite
Branchinecta sandiegonensis	San Diego fairy shrimp	No	Not expected; known to occur in Project quad but vernal pools do not occur onsite.
Campylorhynchus brunneicapillus cousei	Coastal cactus wren	No	Not expected; known to occur in Project quad but cholla (*Cylindropuntia* sp.) thickets were not observed onsite.
Cicindela latesignata obliviosa	Oblivious tiger beetle	No	Not expected; not known to occur in Project quad or surrounding quads and suitable habitat does not occur onsite.
Euphyes vestris harbisoni	Harbison's dun skipper	No	Not expected; no current data available from CNDDB, but historically only 16 occurrences known[1], host plant (*Carex spissa*) not observed.
Perognathus longimembris pacificus	Pacific pocket mouse	No	Not expected; marginally suitable habitat occurs onsite but not known to occur in Project quad.
Streptocephalus woottoni	Riverside fairy shrimp	No	Not expected; not known to occur in Project quad and no vernal pools occur onsite.

Raptor Foraging and Migratory Birds

Raptors are protected under California Fish and Game Code Section 3503.5, which specifically protects all birds in the orders Falconiformes or Strigiformes (raptors, including owls and turkey

[1] Faulkner and Klein, 2004

vultures). It is unlawful to take, possess or destroy any such raptors or their nests and eggs except as otherwise provided in the Fish and Game Code. The Site is unlikely to support raptor foraging because no suitable prey species were observed onsite and much of the Site is in active agricultural use.

California Fish and Game Code Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant to the Code. The federal Migratory Bird Treaty Act prohibits the killing or transport of native migratory birds, or any part, nest, or egg or any such bird unless allowed by another regulation (such as for "game" birds). Therefore, all native, non-game birds on the Site, and the nests and eggs of all native non-game birds, are protected during the nesting season even if these birds are not special-status or otherwise protected.

Large Mammal Use / Wildlife Corridor

No evidence of Site use by large mammals such as mule deer (*Odocoileus hemionus*) was found during REC's survey. The Site is separated from land along the San Luis Rey River that large animals could potentially use by fencing. The Site is very unlikely to serve as a wildlife corridor or linkage because of the fencing along the only area that could serve as a wildlife corridor and the development around the remainder of the Site.

JURISDICTIONAL WETLANDS AND WATERWAYS

Although the Site is less than 0.1 mile from the San Luis Rey River, no jurisdictional wetlands or waterways occur onsite.

OTHER UNIQUE FEATURES/RESOURCES

The Site does not include any hilltops, rock outcrops, uncommon soils or unusual topography. Due to the Site's proximity to the San Luis Rey River, it is directly adjacent to an area designated as a 100 year floodplain in the "Development Constraints" figure of the City's Plan (Fig. 2-6, City of Oceanside 2010). However, the floodplain does not extend onsite.

SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

Impacts to biological resources can be categorized as direct, indirect, or cumulative. Direct impacts are a result of Project implementation, and generally include: loss of vegetation, special-status habitats, and plant and animal populations; introduction of non-native species which may outcompete and displace native vegetation; activity-related wildlife mortality; loss of foraging, nesting, breeding, or burrowing habitat; and fragmentation of wildlife corridors. Indirect impacts occur as a result of the increase in human encroachment in the natural environment and include off-road vehicle use, which impacts special-status plant and animal species; harassment and/or collection of wildlife species; wildlife predation by domestic animals that intrude into open space areas; and increased wildlife mortality along roads. **Figure 5** depicts the Project's anticipated direct impacts to biological resources that would occur from implementation of the Project. Direct and indirect Project impacts to habitats and special-status resources are discussed in the following sections.

Direct Impacts
Implementation of the Project is assumed to result in the direct impact of all 15.73 acres of onsite habitat. Offsite impacts are not expected at this time. Anticipated habitat impacts resulting from implementation of the Project and required mitigation are summarized in Table 4, below.

Table 4. Habitat/Vegetation Communities and Impacts

Habitat/Vegetation Community	Existing Onsite (acres)	Impacts Onsite (acres)	Mitigation Ratio	Mitigation Required (acres)
Developed Land (12000)	1.47	1.44	-	0.00
Disturbed Land (11300)	2.16	2.13	-	0.00
Non-native Vegetation (11000)	0.45	0.40	-	0.00
Row Crops (18320)	11.83	11.82	-	0.00
TOTAL	**15.91**	**15.91**	**-**	**0.00**

Impacts to developed land, disturbed land, non-native vegetation, and row crops are not considered significant and would not require mitigation. Future development of the Site would not directly impact any wildlife corridors, linkages, or wildlife nursery sites.

Potentially Significant Indirect Impacts
The Project is surrounded by development to the north, east, and west. The only area that could be subject to indirect impacts would be the land to the south between the San Luis Rey River and the Site. However, because the surrounding land is already developed with residences and light industrial development, it is unlikely that additional future residential development onsite would significantly increase indirect impacts that are already likely to be present such as human intrusion, artificial lighting, and noise.

Proposed Mitigation
The Project would not result in any significant impacts to sensitive habitats or species, therefore, mitigation is not required nor proposed.

Avoidance Measures
Although the Project would not result in any significant impacts, the Project would incorporate certain avoidance measures to prevent significant impacts:

- The project applicant shall develop an educational pamphlet (in English and Spanish) for the identification of raptor nests and to guide tree pruning activities in suburban areas during the breeding season. Landscaping companies and tree trimming services that have projects in the City shall be required to use the pamphlet to educate their employees on the recognition of raptor nest trees. Trimming of trees containing raptor or migrating bird nests shall be prohibited during the raptor breeding season (January 15 to August 31). Human disturbance shall be restricted around documented nesting habitat during the breeding season based on the following:

- To avoid any direct and indirect impacts to raptors and/or any migratory birds, grubbing and clearing of vegetation that may support active nests and construction activities adjacent to nesting habitat would occur outside of the breeding season (January 15 to August 31). If removal of habitat and/or construction activities is necessary adjacent to nesting habitat during the breeding season, the applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of non-listed nesting migratory birds on or within 300 feet of the construction area, and federally or state-listed birds and raptors on or within 500 feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected by the City-approved biologist, the following buffers shall be established:
    1. no work within 300 feet of a non-listed nesting migratory bird nest, and
    2. no work within 500 feet of a listed bird or raptor nest. However, the City may reduce these buffer widths depending on site-specific conditions (e.g., the width and type of screening vegetation between the nest and proposed activity) or the existing ambient level of activity (e.g., existing level of human activity within the buffer distance). If construction must take place within the recommended buffer widths above, the project applicant would contact the City to determine the appropriate buffer.

- Project-related landscaping shall not include exotic plant species that may be invasive to native habitats. Invasive exotic plant species not to be used include those listed on the California Invasive Plant Council's Invasive Plant Inventory.

CUMULATIVE IMPACTS

Cumulative impacts occur as a result of ongoing direct and indirect impacts of unrelated projects within a geographic area, and are assessed on a regional basis to determine the overall effect of numerous activities on a special-status resource over a larger area.

Because the Site is already partially developed, surrounded by development on three sides, the only undeveloped land onsite does not contain sensitive habitat and no naturally occurring special-status species were detected or have moderate to high potential to occur onsite, cumulative impacts can be determined to be below a level of significance without conducting a review of other projects in the region.

CONCLUSION

Implementation of the proposed North River Road (Kawano Property) Project is assumed to result in direct impacts to 1.44 acres of developed land, 2.13 acres of disturbed land, 0.40 acre of non-native vegetation and 11.82 acres of row crops. Mitigation is not required for impacts to these habitats. Cumulative impacts are below a level of significance and do not require mitigation.

This concludes REC's biological resources letter report. Please do not hesitate to contact REC with any questions or comments. Thank you.

Sincerely,

Lee BenVau
Field Biologist

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James Cooper – GIS

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Figure 1. Regional Location
Figure 2. Vicinity Map
Figure 3. Aerial Photograph of Project Site
Figure 4. Biological Resources
Figure 5. Project Impacts

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Attachment A. Plants Observed on the North River Road (Nagata Property) Project Site
Attachment B. Animals Observed on the North River Road (Nagata Property) Project Site
Attachment C. Special-Status Plants with the Potential to Occur on the North River Road (Nagata Property) Project Site
Attachment D. Special-Status Animals with the Potential to Occur on the North River Road (Nagata Property) Project Site
Attachment E. North River Road (Nagata Property) Project Site Photographs, December 2015

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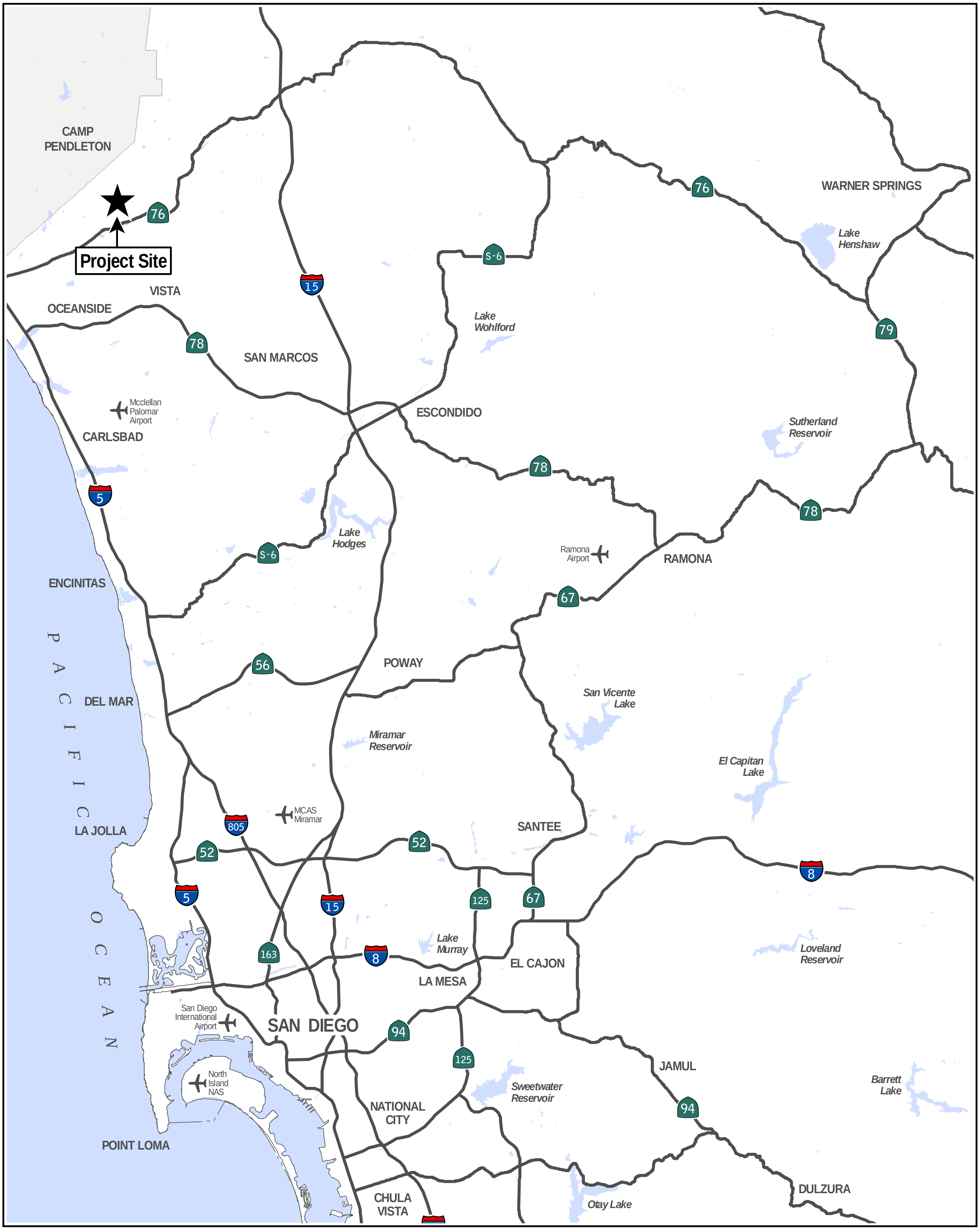

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R·E·C Consultants, Inc.

Regional Location

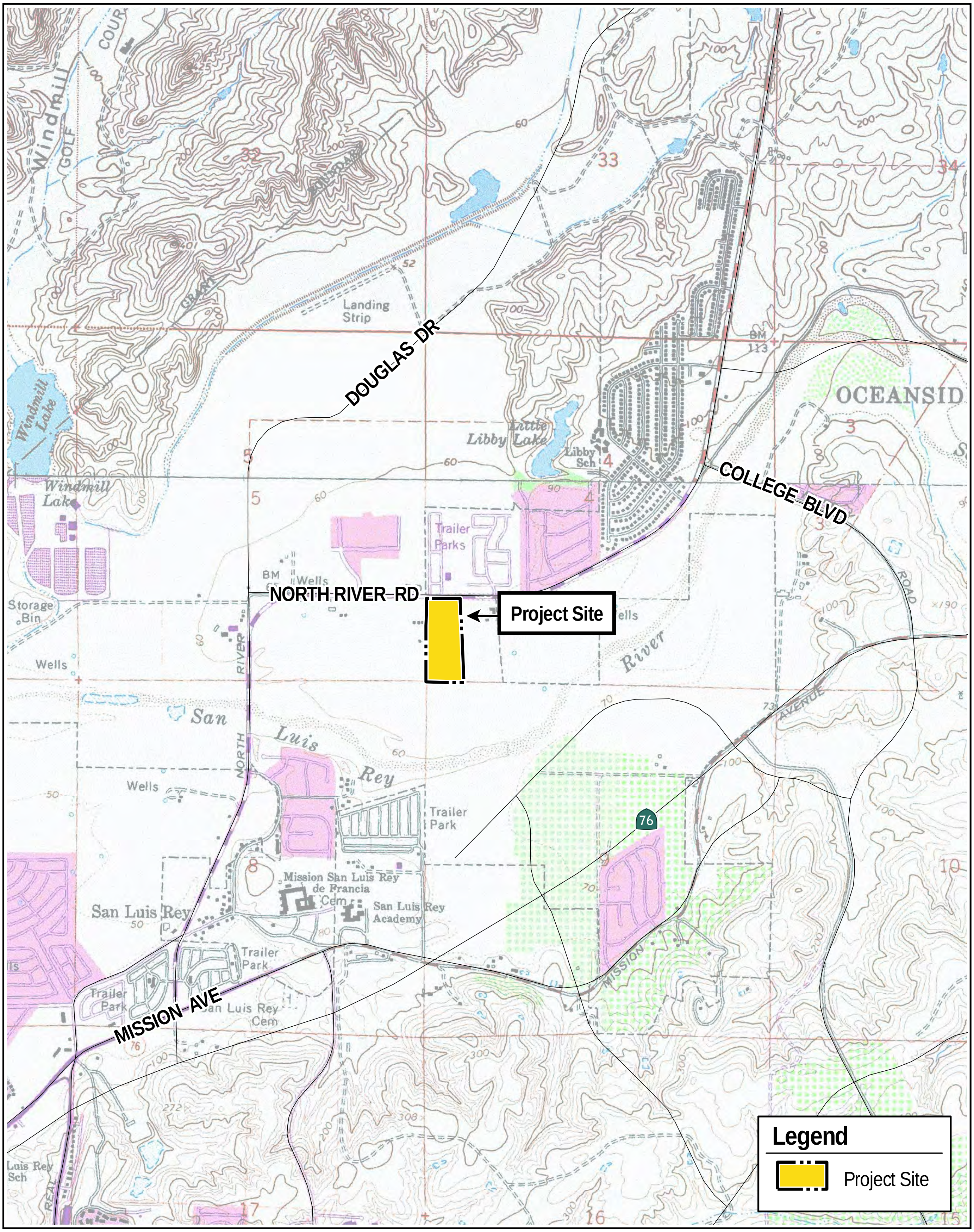
NORTH RIVER ROAD (NAGATA PROPERTY)

Miles 0 2.5 5

Source: ESRI Basemap

FIGURE 1

September 2016



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Vicinity Map

NORTH RIVER ROAD (NAGATA PROPERTY)

Feet
0 1,000 2,000

Source: ESRI Basemap

FIGURE 2

September 2016

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Aerial Photograph of Project Site

NORTH RIVER ROAD (NAGATA PROPERTY)

Feet 0 150 300

Aerial Source: Google Earth, March 2016

FIGURE 3

September 2016

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Biological Resources

NORTH RIVER ROAD (NAGATA PROPERTY)

Aerial Source: Google Earth, March 2016

FIGURE 4

September 2016

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Project Impacts

NORTH RIVER ROAD (NAGATA PROPERTY)

Feet 0 100 200

FIGURE 5

Aerial Source: Google Earth, March 2016

September 2016

ATTACHMENT A

PLANTS OBSERVED ON THE NORTH RIVER ROAD (NAGATA PROPERTY) PROJECT SITE			
Species Name	**Common Name**	**Family**	**Habitat**
*Acacia cyclops**	Cyclops acacia	Fabaceae	NNV
Artemisia californica	coastal sagebrush	Asteraceae	RC
Artemisia douglasiana	Douglas mugwort	Asteraceae	NNV
*Arundo donax**	giant reed	Poaceae	DIS
Baccharis pilularis subsp. consanguinea	chaparral broom, coyote brush	Asteraceae	DIS, RC
Baccharis salicifolia subsp. salicifolia	mule-fat, seep-willow	Asteraceae	RC
Baccharis sarothroides	broom baccharis	Asteraceae	RC
*Bougainvillea sp.**	bougainvillea	Nyctaginaceae	NNV
*Bromus diandrus**	ripgut grass	Poaceae	NNV
*Bromus madritensis subsp. rubens**	red brome, foxtail chess	Poaceae	DIS, NNV
*Carpobrotus edulis**	hottentot-fig	Aizoaceae	NNV
*Chenopodium album**	lamb's quarters	Chenopodiaceae	DIS, NNV
*Citrullus lanatus var. citroides**	citron, watermelon	Cucurbitaceae	RC
*Citrus x sinensis**	sweet orange	Rutaceae	DIS, NNV
*Cucumis melo var. cantalupo**	cantaloupe	Cucurbitaceae	RC
Datura wrightii	western jimson weed	Solanaceae	DIS
*Erigeron bonariensis**	flax-leaf fleabane	Asteraceae	DIS
Erigeron sp.(*)	horseweed, fleabane	Asteraceae	DIS, RC
*Erodium moschatum**	white-stem filaree/storksbill	Geraniaceae	DIS, RC
*Euphorbia maculata**	spotted spurge	Euphorbiaceae	DIS
*Euphorbia pulcherrima**	poinsettia	Euphorbiaceae	NNV
*Foeniculum vulgare**	sweet fennel	Apiaceae	NNV
Heterotheca grandiflora	telegraph weed	Asteraceae	DIS
*Hirschfeldia incana**	short-pod mustard	Brassicaceae	DIS, NNV, RC
Italica Group*	broccoli	Brassicaceae	RC
*Lactuca serriola**	prickly lettuce	Asteraceae	RC
*Malva parviflora**	cheeseweed	Malvaceae	DIS, RC
*Marrubium vulgare**	horehound	Lamiaceae	NNV
*Myoporum laetum**	ngaio, mousehole tree	Scrophulariaceae	NNV
*Olea europaea**	olive	Oleaceae	DIS, NNV
*Opuntia ficus-indica**	mission prickly-pear, Indian-fig	Cactaceae	NNV
Opuntia littoralis	coast prickly-pear	Cactaceae	DIS
*Pelargonium x hortorum**	zonal geranium	Geraniaceae	NNV
Pinus torreyana!	Torrey pine	Pinaceae	NNV
*Plantago lanceolata**	English plantain, rib-grass	Plantaginaceae	DIS
Platanus racemosa	western sycamore	Platanaceae	NNV
Populus fremontii subsp. fremontii	western cottonwood	Salicaceae	DIS
*Portulaca oleracea**	common purslane	Portulacaceae	NNV
Pseudognaphalium biolettii	bicolor cudweed	Asteraceae	NNV
*Punica granatum**	pomegranate	Lythraceae	NNV
Rhus integrifolia	lemonadeberry	Anacardiaceae	RC
*Ricinus communis**	castor bean	Euphorbiaceae	DIS, NNV, RC
Salix lasiolepis	arroyo willow	Salicaceae	RC
*Salsola tragus**	prickly Russian-thistle, tumbleweed	Chenopodiaceae	NNV, RC
Sambucus nigra subsp. caerulea	blue elderberry	Adoxaceae	DIS
*Schismus barbatus**	Mediterranean schismus	Poaceae	DIS
*Silybum marianum**	milk thistle	Asteraceae	RC
*Sisymbrium irio**	London rocket	Brassicaceae	DIS, NNV
Solanum americanum	white nightshade	Solanaceae	DIS, RC

ATTACHMENT A

Species Name	Common Name	Family	Habitat
*Sonchus oleraceus**	common sow-thistle	Asteraceae	DIS, RC
*Tamarix sp.**	tamarisk/salt-cedar	Tamaricaceae	RC
*Tribulus terrestris**	puncture vine	Zygophyllaceae	DIS
*Urtica urens**	dwarf nettle	Urticaceae	DIS, RC
*Washingtonia robusta**	Mexican fan palm	Arecaceae	NNV, RC
*Yucca gloriosa**	Spanish dagger	Agavaceae	NNV

* non-native
! State or Federal special-status (State endangered, threatened, or rare; Federal endangered, threatened, or candidate for listing; CRPR 1-4)

Habitat Abbreviations
DIS - Disturbed
NNV - Non-native Vegetation
RC - Row Crops

ATTACHMENT B

ANIMALS OBSERVED ON THE NORTH RIVER ROAD (NAGATA PROPERTY) PROJECT SITE			
Species Name	**Common Name**	**Habitat**	**Number**
Birds			
Charadrius vociferus vociferus	killdeer	RC	flock (~20)
Melospiza melodia	song sparrow	DIS, RC	3
Sayornis nigricans semiater	black phoebe	RC	1
Setophaga coronata	yellow-rumped warbler	RC	1
Zenaida macroura marginella	mourning dove	DIS, RC	4

* non-native

! State or federal special-status species (State endangered, threatened, endangered candidate, fully protected, watchlist, or CDF sensitive; or federal endangered, threatened, candidate for listing, or USFWS Bird of Conservation Concern)

Habitat Abbreviations

DIS - Disturbed
RC - Row Crops

ATTACHMENT C

SPECIAL-STATUS PLANTS WITH THE POTENTIAL TO OCCUR ON THE NORTH RIVER ROAD (NAGATA PROPERTY) PROJECT SITE (USGS SAN LUIS REY QUAD, 20 - 22 METERS [66 - 72 FT])								
Species Name	**Common Name**	**Family**	**CRPR**	**State/ Federal**	**MHCP NE**	**Growth form, bloom time**	**Habitat**	**Potential to Occur Onsite**
Abronia maritima	red sand-verbena	Nyctaginaceae	4.2	-/-	-	Perennial herb, Feb-Nov	Coastal dunes; 0-100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	1B.1	-/BLM-S, USFS-S	-	Annual herb, Jan-Sep	Sandy chaparral, coastal scrub, desert dunes; 75-1600 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Acanthomintha ilicifolia	thornmint, San Diego thorn-mint	Lamiaceae	1B.1	SE/FT	X	Annual herb, Apr-Jun	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Endemic to active vertisol clay soils of mesas & valleys. Usually on clay lenses within grassland or chaparral communities. 10-960 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Acmispon prostratus (Lotus nuttallianus)	prostrate/Nuttall's acmispon (Nuttall's lotus)	Fabaceae	1B.1	-/-	X	Annual herb, Mar-Jul	Coastal dunes, sandy coastal scrub; 0-10 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Adolphia californica	spineshrub, California adolphia	Rhamnaceae	2B.1	-/-	-	Shrub (deciduous), Dec-May	From sandy/gravelly to clay soils within grassland, coastal sage scrub, or chaparral; various exposures. 45-740 m.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site; would have been detectable and was not observed.
Ambrosia pumila	San Diego ambrosia	Asteraceae	1B.1	-/FE	X	Perennial herb (rhizomatous), Apr-Oct	Sandy loam or clay soil, sometimes alkaline, in chaparral, coastal scrub, valley and foothill grassland. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools. 3-580 m	Low; at least one CNDDB occurrence documented in Project quad but only marginally suitable habitat occurs on-site; would have been detectable and was not observed.

ATTACHMENT C

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Arctostaphylos glandulosa subsp. crassifolia	Del Mar manzanita, fe del mar manzanita	Ericaceae	1B.1	-/FE	X	Shrub (evergreen), Dec-Jun	Chaparral on sandy coastal mesas and ocean bluffs; 30-365 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.
Artemisia palmeri	Palmer's sagewort, San Diego sagewort	Asteraceae	4.2	-/-	-	Biennial to perennial herb to subshrub, Feb-Sep	Drainages and riparian areas in sandy soil within chaparral, coastal scrub, riparian forest, riparian woodland and riparian scrub. 15-915 m	Low; one individual observed just offsite in non-native vegetation, but none were detected onsite.
Asplenium vespertinum	western spleenwort	Aspleniaceae	4.2	-/-	-	Perennial herb (rhizomatous), Feb-Jun	Under overhanging rocks in rocky chaparral, cismontane woodland, coastal scrub. 180-1000 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Astragalus tener var. titi	coastal dune milkvetch	Fabaceae	1B.1	SE/FE	-	Annual herb, Mar-May	Sandy coastal bluff scrub, coastal dunes, coastal prairie (mesic); 1-50 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	1B.2	-/-	-	Perennial herb, Mar-Oct	Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland, also ridgetops and alkaline low places. 2-460 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.
Atriplex pacifica	south coast saltbush, south coast saltscale	Chenopodiaceae	1B.2	-/-	-	Annual herb, Mar-Oct	Alkali soils in coastal bluff scrub, coastal dunes, coastal scrub, playas. 1-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Baccharis vanessae	Encinitas baccharis	Asteraceae	1B.1	SE/FT	X	Shrub (deciduous), Aug-Nov	Steep, open, rocky areas with sandstone soils in maritime chaparral, cismontane woodland; 40-855 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site; would have been detectable and was not observed.
Bahiopsis laciniata (Viguiera l.)	San Diego sunflower, San Diego County viguiera	Asteraceae	4.2	-/-	-	Shrub, Feb-Aug	Slopes and ridges in chaparral and coastal scrub. 60-750 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Bloomeria clevelandii (Muilla c.)	San Diego goldenstar	Themidaceae	1B.1	-/BLM-S	X	Perennial herb (bulbiferous), Apr-May	Clay soil in chaparral, coastal scrub, valley & foothill grassland. Often on mounds between vernal pools in fine, sandy loam. 50-465 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Brodiaea filifolia	thread-leaf brodiaea	Themidaceae	1B.1	SE/FT	X	Perennial herb (bulbiferous), Mar-Jun	Dense Auld and Bosanko clay soils, most often associated with grassland but may occur within openings of other vegetation communities such as coastal sage scrub; 10-1020 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	1B.1	-/BLM-S, USFS-S	-	Perennial herb (deciduous, bulbiferous), May-Jul	Mesic, clay, sometimes serpentine soils in closed-cone coniferous forest, chaparral, cismontane woodland, meadows & seeps, valley & foothill grassland. Usually in vernal pools and small drainages. 30-1695 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.
Calandrinia breweri	Brewer's calandrinia	Montiaceae	4.2	-/-	-	Annual herb, Mar-Jun	Sandy or loamy disturbed or burned areas in chaparral, coastal scrub; 10-1220 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Cistanthe maritima	sea kisses, seaside cistanthe/calandrinia	Montiaceae	4.2	-/-	-	Annual herb, Feb-Aug	Sandy soils in coastal bluff scrub, coastal scrub, valley & foothill grassland; 5-300 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Camissoniopsis lewisii (Camissonia l.)	Lewis's evening-primrose	Onagraceae	3	-/-	-	Annual herb, Mar-Jun	Sandy or clay soil in cismontane woodland, coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland. 0-300 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Caulanthus simulans	Payson's caulanthus, Payson's jewel-flower	Brassicaceae	4.2	-/USFS-S	-	Annual herb, Feb-Jun	Sandy, granitic soils in chaparral, coastal scrub, burned or disturbed areas; steep, rocky slopes; 90-2200 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Ceanothus verrucosus	wart-stem-lilac, wart-stemmed ceanothus	Rhamnaceae	2B.2	-/-	-	Shrub (evergreen), Dec-May	Chaparral, rocky slopes; 1-380 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.
Centromadia parryi subsp. australis	southern tarplant	Asteraceae	1B.1	-/-	-	Annual herb, May-Nov	Marshes and swamps (margins), valley & foothill grassland (vernally mesic), vernal pools, disturbed areas; 0-975 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Centromadia pungens subsp. laevis	smooth tarplant	Asteraceae	1B.1	-/-	-	Annual herb, Apr-Sep	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley & foothill grassland, disturbed areas; 5-1170 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	1B.1	-/BLM-S	-	Annual herb, Jan-Aug	Sandy coastal bluff scrub, coastal dunes; 0-100 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Chamaebatia australis	southern mountain misery	Rosaceae	4.2	-/-	-	Shrub (evergreen), Nov-May	Gabbroic or metavolcanic chaparral; 300-1020 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site; would have been detectable and was not observed.
Chorizanthe orcuttiana	Orcutt's spineflower	Polygonaceae	1B.1	SE/FE	X	Annual herb, Mar-May	Sandy openings in maritime chaparral, closed-cone coniferous forest, and coastal scrub; 3-125 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Chorizanthe polygonoides var. longispina	knotweed spineflower, long-spined spineflower	Polygonaceae	1B.2	-/BLM-S	-	Annual herb, Apr-Jul	Gabbroic clay soils in chaparral, coastal scrub, meadows & seeps, valley & foothill grassland, near vernal pools. 30-1530 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.
Comarostaphylis diversifolia subsp. diversifolia	summer-holly	Ericaceae	1B.2	-/BLM-S	-	Shrub (evergreen), Apr-Jun	Chaparral, cismontane woodland; 30-945 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Convolvulus simulans	small-flower bindweed, small-flowered morning-glory	Convolvulaceae	4.2	-/-	-	Annual herb, Mar-Jul	Wet clay and serpentine ridges in chaparral openings, coastal scrub, valley & foothill grassland. 30-700 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Corethrogyne filaginifolia var. linifolia (TJM2 recognizes no varieties and includes this in C. filaginifolia)	Del Mar sand-aster	Asteraceae	1B.1	-/-	X	Perennial herb, May-Sep	Sandy soils in coastal bluff scrub, openings in maritime chaparral, and sandy coastal scrub; 15-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Cryptantha wigginsii	Wiggin's cryptantha	Boraginaceae	1B.2	-/-	-	Annual herb, Feb-Jun	Coastal scrub, often on clay soil, 20-275 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Deinandra paniculata (Hemizonia p.)	San Diego tarplant, paniculate tarplant	Asteraceae	4.2	-/-	-	Annual herb, Apr-Nov	Vernal pools and vernally mesic areas in coastal scrub, valley & foothill grassland; 25-940 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Dichondra occidentalis	western dichondra, western ponyfoot	Convolvulaceae	4.2	-/-	-	Perennial herb (rhizomatous), Jan-Jul	Sandy loam, clay and rocky soils in chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 50-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Dudleya blochmaniae subsp. blochmaniae	Blochman's dudleya	Crassulaceae	1B.1	-/-	-	Perennial herb, Apr-Jun	Coastal bluff scrub, chaparral, coastal scrub, valley & foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. 5-450 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Dudleya brevifolia (D. blochmaniae subsp. brevifolia)	short-leaf dudleya	Crassulaceae	1B.1	SE/-	X	Perennial herb, Apr-May	On Torrey sandstone in openings in maritime chaparral & coastal scrub; 30-250 m	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat and/or soils do not occur on-site.
Dudleya multicaulis	many-stem dudleya	Crassulaceae	1B.2	-/BLM-S, USFS-S	-	Perennial herb, Apr-Jul	Often clay soils in chaparral, coastal scrub, valley & foothill grassland; 15-790 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Dudleya variegata	variegated dudleya	Crassulaceae	1B.2	-/BLM-S	X	Perennial herb, Apr-Jun	Often rocky/gravelly or clay soils or on rock outcrops in grassland, openings in chaparral, cismontane woodland, coastal scrub, also near vernal pools or on mima mounds; 3-580 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.
Dudleya viscida	sticky dudleya	Crassulaceae	1B.2	-/USFS-S	-	Perennial herb, May-Jun	Rocky coastal bluff scrub, chaparral, coastal scrub, cliffs and banks; 10-550 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Eryngium aristulatum var. parishii	San Diego button-celery	Apiaceae	1B.1	SE/FE	-	Biennial to perennial herb, Apr-Jun	Mesic coastal scrub, valley & foothill grassland, vernal pools; 15-880 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Eryngium pendletonense (E. pendletonensis)	Pendleton button-celery	Apiaceae	1B.1	-/-	-	Perennial herb, Apr-Jun	Coastal bluff scrub, valley and foothill grassland, vernal pools/clay, vernally mesic; 15-110 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Euphorbia misera	cliff spurge	Euphorbiaceae	2B.2	-/-	-	Shrub, Dec-Aug	Coastal bluff scrub, coastal scrub/ rocky; 10-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.
Ferocactus viridescens	coast barrel cactus, San Diego barrel cactus	Cactaceae	2B.1	-/-	-	Perennial (stem succulent), May-Jun	Chaparral, coastal scrub, valley & foothill grassland, near vernal pools; 3-490 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Frankenia palmeri	Palmer's frankenia	Frankeniaceae	2B.1	-/-	-	Perennial herb, May-Jul	Coastal dunes, coastal salt marshes and swamps, playas; 0-10 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Githopsis diffusa subsp. filicaulis	Mission Canyon bluecup	Campanulaceae	3.1	-/USFS-S	-	Annual herb, Apr-Jun	Chaparral (mesic, disturbed areas); 450-700 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Harpagonella palmeri	Palmer's grappling-hook	Boraginaceae	4.2	-/-	-	Annual herb, Mar-May	Clay soils in chaparral, coastal scrub, valley & foothill grassland; 20-955 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Hazardia orcuttii	Orcutt's goldenbush, Orcutt's hazardia	Asteraceae	1B.1	ST/-	X	Shrub (evergreen), Aug-Oct	Grassy edges of maritime chaparral, coastal scrub, often clay soil; 80-85 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site; would have been detectable and was not observed.
Heterotheca sessiliflora subsp. sessiliflora	false goldenaster, beach goldenaster	Asteraceae	1B.1	-/-	-	Perennial herb, Mar-Dec	Sandy soils in coastal chaparral, coastal dunes, coastal scrub; 0-5 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Holocarpha virgata subsp. elongata	graceful tarplant	Asteraceae	4.2	-/-	-	Annual herb, May-Nov	Chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 60-1100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Hordeum intercedens	little barley, vernal barley	Poaceae	3.2	-/-	-	Annual herb, Mar-Jun	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; 5-1000 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Horkelia truncata	Ramona horkelia	Rosaceae	1B.3	-/-	-	Perennial herb, May-Jun	Clay or gabbroic soils in mixed chaparral, cismontane woodland, vernal streams, disturbed areas; 400-1300 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	1B.2	-/-	-	Shrub, Apr-Nov	Sandy, often disturbed areas in chaparral, coastal scrub; 10-135 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Iva hayesiana	San Diego marsh-elder	Asteraceae	2B.2	-/-	-	Perennial herb to subshrub, Apr-Oct	Marshes & swamps, playas, riverwashes; 10-500 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Juglans californica (J. c. var. californica)	Southern California black walnut	Juglandaceae	4.2	-/-	-	Tree (deciduous), Mar-Aug	Alluvial soils in chaparral, cismontane woodland, coastal scrub; 50-900 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Juncus acutus subsp. leopoldii	southwestern spiny rush	Juncaceae	4.2	-/-	-	Perennial herb, Mar-Jun	Coastal dunes (mesic), meadows & seeps (alkaline seeps), marshes and swamps (coastal salt); 3-900 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Lasthenia glabrata subsp. coulteri	Coulter's salt-marsh daisy, Coulter's goldfields	Asteraceae	1B.1	-/-	-	Annual herb, Feb-Jun	Alkaline soils in coastal salt marshes & swamps, playas, vernal pools; 1-1375 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Lepidium virginicum var. robinsonii (not recognized in TJM2)	Robinson's peppergrass	Brassicaceae	4.3	-/-	-	Annual herb, Jan-Jul	Dry chaparral, coastal scrub; 1-885 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Leptosyne maritima (Coreopsis m.)	San Diego sea-dahlia	Asteraceae	2B.2	-/-	-	Perennial herb, Mar-May	Coastal bluff scrub, coastal scrub; 5-185 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Lycium californicum	California desert thorn	Solanaceae	4.2	-/-	-	Shrub, Mar-Aug	Coastal bluff scrub, coastal scrub; 5-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site; would have been detectable and was not observed.
Microseris douglasii subsp. platycarpha	small-flower microseris	Asteraceae	4.2	-/-	-	Annual herb, Mar-May	Clay soils in cismontane woodland, coastal scrub, valley & foothill grassland, vernal pools; 15-1070 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site.
Mimulus diffusus (included in M. palmeri in TJM2)	Palomar monkey flower	Phrymaceae	4.3	-/-	-	Annual herb, Apr-Jun	Sandy or gravelly chaparral, lower montane coniferous forest; 1220-1830 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Monardella hypoleuca subsp. lanata	felt-leaf monardella	Lamiaceae	1B.2	-/-	-	Perennial herb to subshrub (rhizomatous), Jun-Aug	Sandy soil in understory of mixed chaparral, chamise chaparral, southern oak woodland; 300-1575 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Myosurus minimus (includes M. m. subsp. apus)	little mousetail	Ranunculaceae	3.1	-/-	X	Annual herb, Mar-Jun	Valley & foothill grassland, vernal pools (alkaline); 20-640 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Nama stenocarpa	mud nama	Boraginaceae	2B.2	-/-	-	Annual to perennial herb, Jan-Jul	Marshes & swamps (lake margins, riverbanks); 5-500 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Navarretia fossalis	spreading navarretia	Polemoniaceae	1B.1	-/FT	X	Annual herb, Apr-Jun	Chenopod scrub, marshes & swamps (shallow freshwater), playas, vernal pools; 30-655 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Nemacaulis denudata var. denudata	coast woolly-heads	Polygonaceae	1B.2	-/-	-	Annual herb, Apr-Sep	Coastal dunes; 0-100 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Nemacaulis denudata var. gracilis	slender woolly-heads, slender cottonheads	Polygonaceae	2B.2	-/-	-	Annual herb, Mar-May	Coastal dunes, desert dunes, Sonoran desert scrub; -50-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Nolina cismontana	Peninsular bear-grass, chaparral nolina	Ruscaceae	1B.2	-/-	-	Shrub (evergreen), Mar-Jul	Sandstone, shale or gabbro soils in chaparral, coastal scrub; 140-1275 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site; would have been detectable and was not observed.
Ophioglossum californicum	California adder's tongue	Ophioglossaceae	4.2	-/-	-	Perennial herb (rhizomatous), Dec-Jun	Mesic chaparral and valley & foothill grassland, vernal pools margins); 60-525 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Orcuttia californica	California Orcutt's grass	Poaceae	1B.1	SE/FE	X	Annual herb, Apr-Aug	Vernal pools; 15-660 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Orobanche parishii subsp. brachyloba	beach orobanche, short-lobe orobanche	Orobanchaceae	4.2	-/-	-	Perennial herb (parasitic), Apr-Oct	Sandy coastal bluff scrub, coastal dunes, coastal scrub; parasitic on shrubs, generally Isocoma menziesii; 3-305 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Pinus torreyana (subsp. torreyana)	Torrey pine	Pinaceae	1B.2	-/-	-	Tree (evergreen)	Sandstone soils in closed-cone coniferous forest, chaparral; 75-160 m	**Observed onsite; 2 individuals near residence, 3 just offsite. Assumed to be planted.**
Pentachaeta aurea subsp. aurea	golden-ray pentachaeta	Asteraceae	4.2	-/-	-	Annual herb, Mar-Jul	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley & foothill grassland; 80-1850 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Phacelia stellaris	Brand's phacelia	Boraginaceae	1B.1	-/FC	-	Annual herb, Mar-Jun	Coastal dunes, coastal scrub; 1-400 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	4.3	-/-	-	Shrub (deciduous), May-Aug	Chaparral, cismontane woodland, riparian woodland; 100-1100 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Quercus dumosa	Nuttall's scrub oak	Fagaceae	1B.1	-/-	-	Shrub (evergreen), Feb-Aug	Sandy soil near coast, clay loam soils in closed-cone coniferous forest, chaparral, coastal scrub; 15-400 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat and/or soils do not occur on-site; would have been detectable and was not observed.
Quercus engelmannii	Engelmann/mesa blue oak	Fagaceae	4.2	-/-	-	Tree (deciduous), Mar-May	Chaparral, cismontane woodland, riparian woodland, valley & foothill grassland; 120-1300 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Selaginella asprella	bluish spike-moss	Selaginellaceae	4.3	-/-	-	Perennial herb (rhizomatous), Jul	Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest/granitic, rocky; 1600-2700 m	Low; no documented CNDDB occurrences in Project quad and suitable soils and/or habitat do not occur on-site.

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite
Selaginella cinerascens	mesa spike-moss, ashy spike-moss	Selaginellaceae	4.1	-/-	-	Perennial rhizomatous herb	Chaparral and coastal scrub on undisturbed soil.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not occur on-site.
Senecio aphanactis	California groundsel, chaparral ragwort	Asteraceae	2B.2	-/-	-	Annual herb, Jan-Apr	Chaparral, cismontane woodland, coastal scrub, sometimes alkaline; 15-800 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Stemodia durantifolia	blue streamwort, purple stemodia	Plantaginaceae	2B.1	-/-	-	Perennial herb, Jan-Dec	Sandy soil in riparian habitats, on wet sand or rocks, drying streambeds, mesic Sonoran desert scrub; 35-795 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Stipa diegoensis (Achnatherum diegoense)	San Diego needlegrass, San Diego County needle grass	Poaceae	4.2	-/-	-	Perennial herb, Feb-Jun	Rocky, often mesic areas in chaparral, coastal scrub; 10-800 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Suaeda esteroa	estuary sea-blite	Chenopodiaceae	1B.2	-/-	-	Perennial herb, May-Jan	Coastal salt marshes and swamps; 0-5 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site.
Suaeda taxifolia	woolly sea-blite	Chenopodiaceae	4.2	-/-	-	Shrub (evergreen), Jan-Dec	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt); 0-50 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	1B.2	-/-	-	Shrub, Apr-May	Rocky, decomposed gabbro soil in chaparral, coastal scrub; 165-1000 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.

Listing Designations

CRPR - California Rare Plant Rank (from Rare Plant Status Review Group, jointly managed by California Department of Fish and Wildlife [CDFW] and California Native Plant Society [CNPS])

1A - Plants presumed extirpated in California and either rare or extinct

1B - Plants rare, threatened or endangered in California AND elsewhere

2A - Presumed extirpated or extinct in California, but more common elsewhere

2B - Plants rare, threatened or endangered in California, but more common elsewhere

.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of

.3 - Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

ATTACHMENT C

Species Name	Common Name	Family	CRPR	State/ Federal	MHCP NE	Growth form, bloom time	Habitat	Potential to Occur Onsite

3 - Plants about which more information is needed - a review list
4 - Plants of limited distribution - a watch list
CBR - Considered But Rejected

State of California species designations (CDFW April 2013)
SE - State-listed Endangered
ST - State-listed Threatened
SR - State-listed Rare

Federal species designations (CDFW April 2013, USFWS 2013)
FE - Federally-listed Endangered
FT - Federally-listed Threatened
FC - Federal candidate for listing

Cnty NE - an X in this column indicates the species is considered a Narrow Endemic by the County of San Diego (MSCP County of San Diego Subarea Plan 1997)

Cnty List - County Sensitive Plant List (County of San Diego 2010)
A - County List A: plants rare, threatened or endangered in California and elsewhere
B - County List B: plants rare, threatened or endangered in California but more common elsewhere
C - County List C: plants which may be rare, but need more information to determine their true rarity status
D - County List D: plants of limited distribution and are uncommon, but not presently rare or endangered

City NE - an X in this column indicates the species is considered a Narrow Endemic by the City of San Diego (Land Development Manual - Biology Guidelines 2009)

MHCP NE - an X in this column indicates the species is considered a Narrow Endemic by the Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista (Final MHCP Vol. II 2003)

MSCP - an X in this column indicates the species is included in the Multiple Species Conservation Program (MSCP Plan 1998)
ECPC - an X in this column indicates the species is proposed covered under in-process East County Multiple Species Conservation Program
NCPC - an X in this column indicates the species is proposed covered under in-process North County Multiple Species Conservation Program

Other abbreviations:
TJM2 - The Jepson Manual, 2nd edition (2012) (taxonomic authority for this report except where it conflicts with special-status plant recognition)
(Common names are primarily from *The Checklist of Vascular Plants of San Diego County* [Rebman and Simpson 2006], and secondarily from CNPS's Inventory of Rare and Endangered Plants [CNPS 2010, 2013])

ATTACHMENT D

SPECIAL-STATUS ANIMALS WITH THE POTENTIAL TO OCCUR ON THE NORTH RIVER ROAD (NAGATA PROPERTY) PROJECT SITE (USGS SAN LUIS REY QUAD, 20 - 22 METERS [66 - 72 FT])					
Species Name	**Common Name**	**State/Federal Status**	**MHCP NE**	**Habitat**	**Potential to Occur Onsite**
INVERTEBRATES					
Branchinecta lynchi	vernal pool fairy shrimp	FP, WL, CDF-S/BLM-S, BCC	-	Vernal pools; only one occurrence documented in San Diego, a depression within coastal sage scrub in Oceanside.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Branchinecta sandiegonensis	San Diego fairy shrimp	-/FE	X	Vernal pools and other unvegetated ephemeral basins in Orange and San Diego Counties and Baja California. Habitat is typically < 30 cm deep and within 64 km of the Pacific Ocean. < 701 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Cicindela senilis frosti	senile tiger beetle	-/-	-	Coastal salt marshes, tidal mud flats, interior alkali mud flats; an inland site near Jacumba and Lake Elsinore.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Cicindela latesignata latesignata (C. l. obliviosa)	western beach tiger beetle (oblivious tiger beetle)	-/-	-	Coastal sea beaches, bays, estuaries, salt marshes, and alkali sloughs. Would be expected on salt flats only around estuaries etc., not inland. Possibly only extant in San Diego County.	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat does not exist on-site.
Danaus plexippus pop. 1	monarch butterfly - California overwintering population	-/USFS-S	-	Land with larval host plant, milkweed (Asclepias spp.), or nectar plants. Overwintering habitats limited to coastal conifer or eucalyptus groves.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Euphyes vestris harbisoni	Harbison's dun skipper	-/-	X	Drainages containing host plant San Diego sedge (Carex spissa) in San Diego and Orange Counties.	Low; no documented CNDDB occurrences in Project quad or surrounding quads and suitable habitat does not exist on-site.
Streptocephalus woottoni	Riverside fairy shrimp	-/FE	X	Vernal pools in grassland and coastal sage scrub in western Riverside, Orange and San Diego Counties (Ramona area), and coastal SD County. Does not appear until later in the season; may require warmer water or longer inundation times than Branchinecta sandiegonensis.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Tryonia imitator	mimic tryonia	-/-	-	Coastal lagoons, estuaries and salt marshes in permanently submerged areas, in a variety of sediment types, withstands wide range of salinity.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
FISH					

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Eucyclogobius kristinae (E. newberryi)	tidewater goby	SSC/FE	-	Coastal lagoons, lower reaches of streams (fresh or brackish), vegetated pools in slow (not stagnant) areas of streams, and uppermost portions of large bays. Generally occurs in water 25-100 cm deep with mud substrate. Spawning occurs on coarse sand. Southern end of range is Agua Hedionda Lagoon in Carlsbad, San Diego.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Gila orcuttii	arroyo chub	SSC/USFS-S	-	Slow moving sections of streams with sand or mud substrate; also in headwaters, creeks, small-medium rivers, often intermittent streams; tolerant of low oxygen and wide temperature fluctuations; midwater and benthic. Southern end of native range is San Luis Rey River basin; introduced to San Diego River.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
AMPHIBIANS					
Anaxyrus californicus (Bufo microscaphus c.)	arroyo toad	SSC/FE	-	Washes, arroyos, sandy riverbanks, and riparian areas, especially with willows, cottonwoods and sycamores; needs exposed sandy streamsides with stable terraces for burrowing with scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding. 0-900 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Spea hammondii	western spadefoot	SSC/BLM-S	-	Grassland, also valley-foothill hardwood woodlands. Vernal pools essential for breeding and egg-laying. Activity limited to wet season, summer storms or during evenings with elevated substrate moisture levels; stays below ground in dry/cold weather. Nocturnal. Extirpated throughout much of lowland southern California.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
REPTILES					
Acinemys pallida (Emys marmorata, Clemmys m. p.)	western pond turtle	SSC/BLM-S, USFS-S	-	Permanent waters with aquatic vegetation; can occur in urban conditions and brackish water. Nests in sand or grassy open fields up to 0.5 km from water. < 1850 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Aspidoscelis hyperythra (beldingi) (A. hyperythrus b.)	orange-throated whiptail (Belding's)	SSC/USFS-S	-	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats; prefers sandy areas with perennial plants that support termites.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Aspidoscelis tigris stejnegeri	coastal whiptail	-/-	-	Found in hot, dry open areas with sparse vegetation; also woodland and riparian areas mostly west of the Peninsular Ranges; ground may be firm soil, sandy, or rocky.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Crotalus ruber	red-diamond rattlesnake	SSC/USFS-S	-	Coastal San Diego County to the eastern slopes of Peninsular Ranges in coastal sage scrub, mixed chaparral, open grassy areas and agricultural areas, chamise chaparral, pinon juniper and desert scrub. Most common in the western foothills of the Peninsular Ranges and in dry rocky inland valleys; associated with granite rock outcroppings, especially in winter. 0-1500 m (typically < 1200m)	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Diadophis punctatus similis	San Diego ringneck snake	-/USFS-S	-	Moist habitats including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands, along coast into Peninsular Ranges. Prefer areas with surface litter or herbaceous vegetation. Often found near abandoned buildings and junk piles in wooded areas. Generally hidden during the day. May not be distinct from San Bernardino subspecies (D. p. modestus), which is also special-status.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Lichanura orcuttii (Charina trivirgata, C. t. ruseofusca)	rosy boa	-/USFS-S	-	Desert, arid scrub, brushland, sandy plains, rocky slopes, and chaparral-covered foothills, particularly where moisture is available (not dependent on permanent water). Associated with rock outcrops; most active at night. 0-2070 m	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Phrynosoma blainvillii (P. coronatum b.)	coast horned lizard	SSC/BLM-S	-	Coastal scrub, chaparral, grassland, cismontane woodland, riparian scrub and woodland; most common in lowlands along sandy washes with scattered low shrubs. Prefers open areas for sunning with loose soil for burial and native harvester ant colonies (few or no Argentine ants).	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Plestiodon skiltonianus interparietalis (Eumeces s. i.)	Coronado Island skink	SSC/BLM-S	-	Rocky areas and dry hillsides in coastal sage scrub, grassland, chaparral, pinyon-juniper woodland, open pine or oak woods, near streams; digs burrows in soil.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Salvadora hexalepis virgultea	coast patch-nosed snake	SSC/-	-	Chaparral, coastal sage scrub, and other brushy vegetation west of desert, near rock outcrops with adjacent seasonal drainages; require small mammal burrows for refuge and overwintering.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Thamnophis hammondii	two-striped garter snake	SSC/BLM-S, USFS-S	-	In or near permanent fresh water, often along streams with rocky beds bordered by willows and other riparian vegetation, also desert oases and sometimes vernal pools. 0-2100 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Thamnophis sirtalis subsp. novum (alternate classification for SD's T. s. infernalis)	south coast garter snake	SSC/-	-	Marsh and upland habitats near permanent fresh water with good strips of riparian vegetation; currently only known in San Pasqual Valley in SD County.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
BIRDS					
Accipiter cooperii	Cooper's hawk	WL/-	-	Open riparian cottonwood and sycamore, oak, and eucalyptus woodland and other open forested areas. Nests in second-growth conifer stands, live oaks or deciduous riparian areas. Forages in openings near forested areas. Similar winter habitat, but open woodlands and fields may be used more. 150-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Agelaius tricolor	tricolored blackbird	SSC/BCC, BLM-S	-	Highly colonial; require open water, protected nesting substrate, and foraging area with insect prey within a few km of colony. Breed and nest in freshwater marshes with emergent vegetation but also in thickets of willow, blackberry, wild rose, tall herbs. In migration and winter inhabit open cultivated lands and pastures as well as marshes. 0-150 m and 300-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	WL/-	-	Steep, moderately vegetated slopes of coastal sage scrub dominated by Artemisia californica but also coastal bluff scrub and chaparral. Nests on the ground at the base of rocks, grass tufts, or saplings, or slightly above ground in the branches of shrubs or trees. 0-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Aquila chrysaetos (canadensis)	golden eagle	FP, WL, CDF-S/BLM-S, BCC	-	Rolling foothills, mountain areas, sage-juniper flats, desert with sufficient mammalian prey base and near suitable nesting sites. Nest on rock ledges of cliffs but sometimes in large trees (e.g., oak or eucalyptus), on steep hillsides, or on the ground. 0-915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Artemisiospiza belli belli (Amphispiza b. b.)	Bell's sage sparrow	WL/BCC	-	Year-round resident in open chamise chaparral and sage scrub, especially recently burned areas or on gabbro substrate; most common in central southern SD County; very sensitive to habitat fragmentation.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

ATTACHMENT D

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Buteo swainsoni	Swainson's hawk	ST/ BCC, BLM-S	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. Relatively tolerant of human activity. 0-150 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	SSC/BCC, USFS-S	X	Open coastal sage scrub with thickets of chollas (Cylindropuntia sp.), south- and west-facing slopes below 460 m, usually within 400 m of river valleys, also hillsides in tributary canyons, along washes, and in very open woodland of coast live oak and California sycamore.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Charadrius nivosus (nivosus) *(C. alexandrinus n.)*	western snowy plover	SSC/FT, BCC	-	Immediate coast at scattered beach, bay and lagoon locations; nests on beaches, dunes and salt flats.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Circus cyaneus	northern harrier	SSC/-	-	Marshes, grasslands, agricultural lands, sagebrush flats, and desert sinks. Nests on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas; forages over grasslands. Year-round resident but more common in winter.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	SE/FT, BCC, BLM-S, USFS-S	-	Forests, woodland, and scrub. Breeds in deciduous riparian woodland, especially dense stands of cottonwood and willow, sometimes mesquite and tamarisk. Dense riparian understory foliage important for nesting (e.g. blackberry, nettles, wild grape), and cottonwood important for foraging habitat.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Elanus leucurus (majusculus) *(E. caeruleus)*	white-tailed kite	FP/BLM-S	-	Widespread over coastal slope, prefers riparian woodlands, oak groves, or sycamore groves adjacent to grassland; feeds almost exclusively on California vole.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Empidonax traillii extimus	southwestern willow flycatcher	SE/FE	-	Riparian and wetland thickets of willow or tamarisk, does not need to be extensive. Nests in trees or shrubs with dense vegetation. Forages within and occasionally above dense riparian vegetation. Present in California from late April to September.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

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Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Eremophila alpestris actia	California horned lark	WL/-	-	Open patches of bare land alternating with low vegetation in grasslands, montane meadows, sagebrush and open coastal plains, fallow grain fields, and alkali flats.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Icteria virens (auricollis)	yellow-breasted chat	SSC/-	-	Summer visitor in dense riparian woodland. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground. Most common in coastal lowland, strongly concentrated in NW corner of County; usually return to SD second week in April and start to leave by early August.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Ixobrychus exilis (exilis)	least bittern	SSC/BCC	-	Nest colonially in dense, tall growths of emergent vegetation (e.g. cattail, sedge, bulrush, or common reed) interspersed with some woody vegetation and open, fresh or brackish water.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Laterallus jamaicensis coturniculus	California black rail	ST, FP/BCC, BLM-S	-	Freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Passerculus guttatus beldingi (P. sandwichensis b.)	Belding's savannah sparrow	SE/-	-	Coastal salt marshes in southern California and northern Baja California. Nests on the ground in natural depression or scrape, primarily in pickleweed (Salicornia virginica) habitat at the higher levels of the marsh, above the reach of the highest spring tides.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Plegadis chihi	white-faced ibis	WL/-	-	Shallow freshwater marsh; nest in dense tule thickets with areas of shallow water for foraging.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Polioptila californica californica	coastal California gnatcatcher	SSC/FT	-	Obligate, permanent resident of coastal sage scrub especially where Artemisia californica dominates; up to 915 m but 90% at 305 m or lower.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Rallus longirostris levipes	light-footed clapper rail	SE, FP/FE	-	Year-round resident in coastal salt marsh dominated by cordgrass and pickleweed, and also known at three freshwater sites in SD County.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Riparia riparia (riparia)	bank swallow	ST/BLM-S	-	Coastal sage scrub, riparian and freshwater marsh; colonial nester, requires vertical banks or cliffs with fine-textured soils, near streams, rivers, lakes, or ocean to dig nest holes.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

ATTACHMENT D

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Setophaga aestiva (Dendroica petechia brewsteri, S. p.)	yellow warbler	SSC/BCC	-	Riparian forest/scrub/woodlands in close proximity to water. Nest and forage in willow shrubs and thickets, and in other riparian plants including cottonwoods and sycamores. In migration and winter, often occur in open woodland, agicultural lands, brushy areas, and forest edges.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Sternula antillarum browni	California least tern	SE, FP/FE	-	Coastal; nest colonially up to 4 mi inland on bare or sparsely vegetated sand beaches, alkali flats, land fills, paved areas. Usually nest in same area in successive years; tend to return to natal site to nest.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Vireo bellii pusillus	least Bell's vireo	SE/FE	-	Summer resident in riparian vegetation along rivers and larger creeks, also dry river bottoms, with both riparian canopy and a somewhat dense or shrubby understory for nesting. 0-610 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
MAMMALS					
Antrozous pallidus (pacificus or pallidus)	pallid bat	SSC/BLM-S, USFS-S	-	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, desert wash and desert scrub; often near rocky outcrops and water. Roost in rock crevices or buildings, less often in caves, tree hollows, mines etc. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Chaetodipus californicus femoralis	Dulzura pocket mouse	SSC/-	-	Coastal sage scrub, mixed chaparral, oak woodland, chamise chaparral, and mixed conifer habitats; attracted to grass-chaparral edges. 0 to over 915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC/-	-	Sandy, herbaceous areas, usually associated with rocks or coarse gravel, in coastal scrub, chaparral, grasslands, sagebrush in western San Diego County; nocturnal.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Choeronycteris mexicana	Mexican long-tongued bat	SSC/-	-	Deep mountain canyons with dense riparian vegetation. Roost in caves, rock fissures, and old mines. Found in residential areas, roosts in garages, sheds, porches, and under houses on stilts; feeds on pollen and nectar, especially of agaves and columnar cacti, and will visit hummingbird feeders and possibly avocado flowers; seen in fall and winter, presumed to not breed in CA.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Corynorhinus townsendii (pallescens)	Townsend's big-eared bat	STC, SSC/BLM-S, USFS-S	-	Wide variety of habitats, but often mesic habitats characterized by coniferous and deciduous forests, also grass and shrubland. All six known maternity colonies in coastal California are in old buildings or in a cave-like feature of a bridge. Roosts in the open, hanging from walls and ceilings. Extremely sensitive to human disturbance.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Dipodomys stephensi	Stephens' kangaroo rat	ST/FE	-	Prefers annual grassland but uses coastal sage scrub with sparse shrub cover; commonly associated with Artemisia californica, Eriogonum fasciculatum and Erodium cicutarium. Terrain is often flat or gently rolling with loose, friable, well-drained soil (generally at least 0.5 m deep). May recolonize abandoned agricultural land. San Jacinto Valley south to Warner Ranch; nocturnal.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Eumops perotis californicus	western mastiff bat	SSC/BLM-S	-	Conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban. Roost in crevices in cliff faces, high buildings, trees, and tunnels. 150-915 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Lasiurus xanthinus	western yellow bat	SSC/-	-	Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats; increasingly, year-round in urban areas in planted palms; roosts in hanging palm fronds; forages over water and among trees for insects.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Leptonycteris yerbabuenae	lesser long-nosed bat	-/FE	-	Arid grasslands and shrublands. Roost in old mines and caves at the base of mountains near alluvial fans vegetated with food plants (agave, yucca, saguaro, and organ pipe cactus).	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Lepus californicus californicus (L. c. bennettii)	San Diego black-tailed jackrabbit	SSC/-	-	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, mixed conifer, and closed cone forest and open areas. Common in irrigated pastures and row crops. 0-915+ m.	Low; at least one CNDDB occurrence documented in Project quad but only marginally suitable habitat occurs on-site.
Myotis yumanensis (saturatus)	Yuma myotis	-/BLM-S	-	Riparian, desert scrub, open woodlands and forests, but closely tied to bodies of water. Nursery colonies in buildings, caves and mines, and under bridges.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Neotoma lepida intermedia	San Diego desert woodrat	SSC/-	-	Coastal sage scrub, oak woodlands and chamise chaparral; moderate to dense canopies preferred. Particularly abundant in rock outcrops, rocky cliffs and slopes. Nocturnal. Associated with cacti. 150-915 m	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.

ATTACHMENT D

Species Name	Common Name	State/Federal Status	MHCP NE	Habitat	Potential to Occur Onsite
Nyctinomops femorosaccus	pocketed free-tailed bat	SSC/-	-	Pine-juniper woodlands, desert scrub, palm oases, desert wash, desert riparian; associated wth rugged canyons, high cliffs, and rock outcroppings. Roost in rock crevices and caves during the day; may also roost in buildings or under roof tiles. Winter habits poorly known.	Low; at least one CNDDB occurrence documented in Project quad but suitable habitat does not exist on-site.
Perognathus longimembris pacificus	Pacific pocket mouse	SSC/FE	X	Coastal sage scrub and grasslands with fine-grain, sandy substrates; historically inhabited coastal dunes, river alluvium, and sage scrub habitats on marine terraces within approximately 4 km of the ocean; 0-150 m.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.
Taxidea taxus (berlandieri or jeffersonii)	American badger	SSC/-	-	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Perfers open areas and may also frequent brushlands with little groundcover. Fossorial; requires burrowing rodents as prey.	Low; no documented CNDDB occurrences in Project quad and suitable habitat does not exist on-site.

Listing Designations

Federal Listing (USFWS 2015, CDFW 2015)
FE - Federal-listed Endangered
FT - Federal-listed Threatened
FC - Federal candidate for listing
BCC - US Fish and Wildlife Service Bird of Conservation Concern
BLM-S - Bureau of Land Management Sensitive
USFS-S - US Forest Service Sensitive

State Listing (CDFW 2015, 2015)
SE - State-listed Endangered
ST - State-listed Threatened
STC - State Threatened Candidate
SEC - State Endangered Candidate
FP - CA Dept. of Fish and Wildlife Fully Protected
SSC - State Species of Special Concern
WL - CA Dept. of Fish and Wildlife Watch List
CDF-S - CA Dept. of Forestry Sensitive

MHCP NE - an X in this column indicates the species is considered a Narrow Endemic by the Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista (Final MHCP Vol. II 2003)

ATTACHMENT E
North River Road (Nagata Property) Project Site Photographs, December 2015

View southeast of row crops

View east-southeast of fringe of vegetation along row crops

ATTACHMENT E
North River Road (Nagata Property) Project Site Photographs, December 2015

View east of disturbed area

View east of non-native vegetation near residence

ATTACHMENT E
North River Road (Nagata Property) Project Site Photographs, December 2015

View south of western agriculture ditch mapped with row crops

View northeast of non-native vegetation strip

APPENDIX I
ARCHAEOLOGICAL SURVEY AND ASSESSMENT REPORT

ARCHAEOLOGICAL SURVEY AND ASSESSMENT FOR THE NORTH RIVER ROAD PLANNED BLOCK DEVELOPMENT OVERLAY DISTRICT DEVELOPMENT PLAN

4617 AND 4665 NORTH RIVER ROAD
CITY OF OCEANSIDE, CALIFORNIA

Prepared for:

City of Oceanside
300 North Coast Highway
Oceanside, CA 92054

Prepared by:

Sue A. Wade
Archaeologist/Historian

Heritage Resources
P.O. Box 8
Ramona, CA 92065

September 6, 2019

ARCHAEOLOGICAL SURVEY AND ASSESSMENT FOR THE NORTH RIVER ROAD PLANNED BLOCK DEVELOPMENT OVERLAY DISTRICT DEVELOPMENT PLAN

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(760) 445-3502

Project Number HR-18021
September 6, 2019

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Author:	Sue A. Wade
Consulting Firm:	Heritage Resources, P.O. Box 8, Ramona, CA 92065, (760) 445-3502
Date:	September 6, 2019
Report:	Archaeological Survey and Assessment for the North River Road Planned Block Development Overlay District Development Plan; 4617 and 4665 North River Road, City of Oceanside, California
Prepared for:	City of Oceanside 300 North Coast Highway Oceanside, CA 92054
Under Contract to:	REC Consultants, Inc. 2442 Second Avenue San Diego, CA 92101
U.S.G.S. Quad. Map:	San Luis Rey, 7.5-minute series
Acreage:	Approximately 25.6-Acres
Keywords:	0: I. Prehistoric: Isolated Occurrences II. Historic: Historic Habitation, Single Family Residences 1: Prehistoric: isolated occurrence Historic: agriculture 2: Prehistoric: Luiseño Historic: Japanese-American 3: Prehistoric Artifacts/Ecofact: pottery, groundstone, shell Historic: residential structures 4: I. San Luis Rey, 1:24,000 III. Coastal Areas-San Luis Rey River Valley 5: Prehistoric: Late Prehistoric Historic: 1947-present 6: Archaeological Survey and Assessment for the North River Road Planned Block Development Overlay District Development Plan; 4617 and 4665 North River Road, City of Oceanside, California 7: Prehistoric: isolated potsherds, groundstone, shell Historic: World War II, farm agriculture, Kawano family, Nagata family 8: Prehistoric P-37-038466, P-37-038467, P-37-038468 Historic: P-37-038464, P-37-038465, P-37-038469

ABSTRACT/MANAGEMENT SUMMARY

Archaeological and historical research and field survey were completed for the North River Road Planned Block Development Overlay District which includes two parcels, totaling 25.6 acres, located at 4616 (the Nagata parcel) and 4665 (the Kawano parcel) North River Road (APNs 157-060-17 and 157-060-40). The studies included a 1-mile radius record search at the South Coastal Information Center, preparation of Chain of Title for each of the two parcels, research of historical archival and published information concerning the project property and occupants during the late nineteenth through mid-to late twentieth centuries at the Oceanside Historical Society and the San Diego History Center, research of historic aerial photographs and maps at San Diego County Cartographic Services Department, research on-line and interviews related to the Kawano and Nagata families' histories and development of the property, survey with Luiseño monitor of the Project property, surface documentation and evaluation of the six discovered historical sites and isolates, architectural documentation of the Frank Kawano, Harry Nagata, and Yatsu Nagata residences, completion of a DPR 523 Historical Resources Forms (Attachment 2), and preparation of this report.

The Project property was vacant land, likely pasture for the Libby family dairy farm (1928 and 1938 aerial photographs), which included the Kawano and Nagata parcels before their purchase by the Kawano and Nagata families in 1947. By 1953, the Kawanos had constructed structures on the eastern property boundary, a residence (the Frank Kawano Residence, still in existence) and associated structures on the west-central portion of the property, and three rectangular warehouses in the center of the property. The western approximately one-third of the property was in agriculture. Also by 1953, the Nagata brothers (George Takamasa Nagata, Harry Hisashi Nagata, and Mitsura Nagata) had constructed 2 residences (one for the George Nagata family, now destroyed, and one for the Harry Nagata family, still in existence) and a packing shed on the west central portion of the property. The remainder of the property was in agriculture. By 1967, a third house (the Yatsu Nagata residence) was built at the east central boundary of the Nagata parcel. As documented by the historic research and field documentation, the three residences are the only structures remaining on the parcels that exceed 50 years in age.

As a result of the February 7 field survey, 3 isolated prehistoric artifacts and the 3 historic residences were recorded. All are documented on appropriate DPR523 Resource Record Forms (Confidential Attachment 1). P-37-038466 is an isolated occurrence of a brownware pottery rim sherd fragment and a fragment of *donax* sp. shell. P-37-038467 is an isolated occurrence of a brownware pottery sherd fragment. P-37-038468 is an isolated occurrence of a bifacial granitic mano fragment. All isolates were located in very disturbed contexts, one adjacent to a modern warehouse, one in a cleared debris area, and one or in an agricultural field. No additional prehistoric cultural material was found.

<u>P-37-038464</u> consists of the Frank Kawano residence constructed between 1948 and 1953. The structure is a single-story cross-gable residence of wood-frame construction set on concrete piers. Remaining ornamental landscape includes two 10-15-foot-tall joshua trees and two 40+-foot-tall cedar trees that frame the eastern entrance, citrus trees to the northwest, and a hedge along the south. The house is vacant and boarded up,

deteriorating from dis-use, and surrounded by the So Cal Ag Properties asphalt pavement, warehouses, and other industrial facilities. The house is a simple vernacular structure of no outstanding architectural significance and its context has been compromised by surrounding modern industrial buildings, infrastructure, and modern residential development. P-37-038465 consists of the Harry Nagata residence constructed between 1947 and 1953. The residence is a single-story "L"-shape floor plan structure of probable wood-frame construction set on concrete pier foundation. There is little remaining landscaping: two olive trees, some citrus, and a few ornamentals. The residence is a simple vernacular structure of no architectural distinction and is vacant and in very poor condition. P-37-038469 consists of the Yatsu Nagata residence most likely constructed in the 1960s. The structure is a single-story cross-gable residence of wood-frame construction set on a poured concrete foundation. Remaining ornamental landscape includes palms, joshua trees, pines, mostly dead native trees, and unkempt shrubbery. The residence is typical of the Contemporary style of American houses built after World War II, particularly in subdivision tracts and has no architectural significance. The house is occupied, but is in poor repair and is deteriorating from age.

As a result of these studies, it is concluded that none of the cultural resources found on the property meet the criteria for eligibility for the California Register of Historical Resources per CCR 15064.5 (a) (3) (A), (B), (C), and (D). The studies were also sufficient to determine that no cultural resources were found on the property that qualify as a "unique archaeological resource" and that the proposed Project will not have a significant effect on archaeological resources per PRC 21083.2. The studies were also sufficient to conclude that the proposed Project will not contradict the City of Oceanside General Plan Environmental Resource Management Element recommendation to encourage the protection of significant cultural resources for future scientific, historic, and educational purposes (1975/2002: p.8). No further measures related to cultural resources on the North River Road Planned Block Development Overlay District Project property are recommended prior to ground-disturbing activities in relation to Project demolition or grading. Because the property is located on an alluvial terrace associated with the San Luis Rey River and because four isolated prehistoric artifacts/ecofacts were discovered during the field survey, it is possible that buried archaeological resources could be encountered during excavations. Therefore, it is recommended that an archaeological monitoring program be implemented at the time of Project development. Development of the monitoring program should take place in consultation with the Luiseño Bands.

TABLE OF CONTENTS

I. INTRODUCTION/UNDERTAKING INFORMATION

The following is a report on the results of the archaeological and historical research and field survey completed for the North River Road Planned Block Development Overlay District which includes two parcels, totaling 25.6 acres, located at 4616 (the Nagata parcel) and 4665 (the Kawano parcel) North River Road (APNs 157-060-17 and 157-060-40). The studies included 1-mile radius record search at the South Coastal Information Center, preparation of Chain of Title for each of the two parcels, research of historical archival and published information concerning the project property and occupants during the late nineteenth through mid-to late twentieth centuries at the Oceanside Historical Society and the San Diego History Center, research of historic aerial photographs and maps at San Diego County Cartographic Services Department, research on-line and interviews related to the Kawano and Nagata families' histories and development of the property, survey with Luiseño monitor of the project property, surface documentation and evaluation of the six discovered historical sites and isolates, architectural documentation of the Frank Kawano, Harry Nagata, and Yatsu Nagata residences, completion of a DPR 523 Historical Resources Forms (Attachment 2), and preparation of this report.

This work was completed in compliance with environmental statutes, regulations, and planning documents of the State of California and the City of Oceanside: the California Code of Regulations (CCR) Title 14, Chapter 3, 15064.5; the California Public Resources Code, Division 13. Environmental Quality, Chapter 2.6, 21083.2; and the City of Oceanside General Plan Environmental Resource Management Element. The following report follows the guidelines established by the *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (OHP 1989), first developing the historical context for the region and the land use history of the project property, then presenting the methods and results of the field work and artifact analysis and a summation of the results. The report concludes with determinations of 1) eligibility for the California Register of Historical Resources in compliance with California Code of Regulations 15064.5 (a) (3) (A), (B), (C), and (D); 2) significance in compliance with California Public Resources Code 21083.2; and 3) City of Oceanside General Plan recommendations.

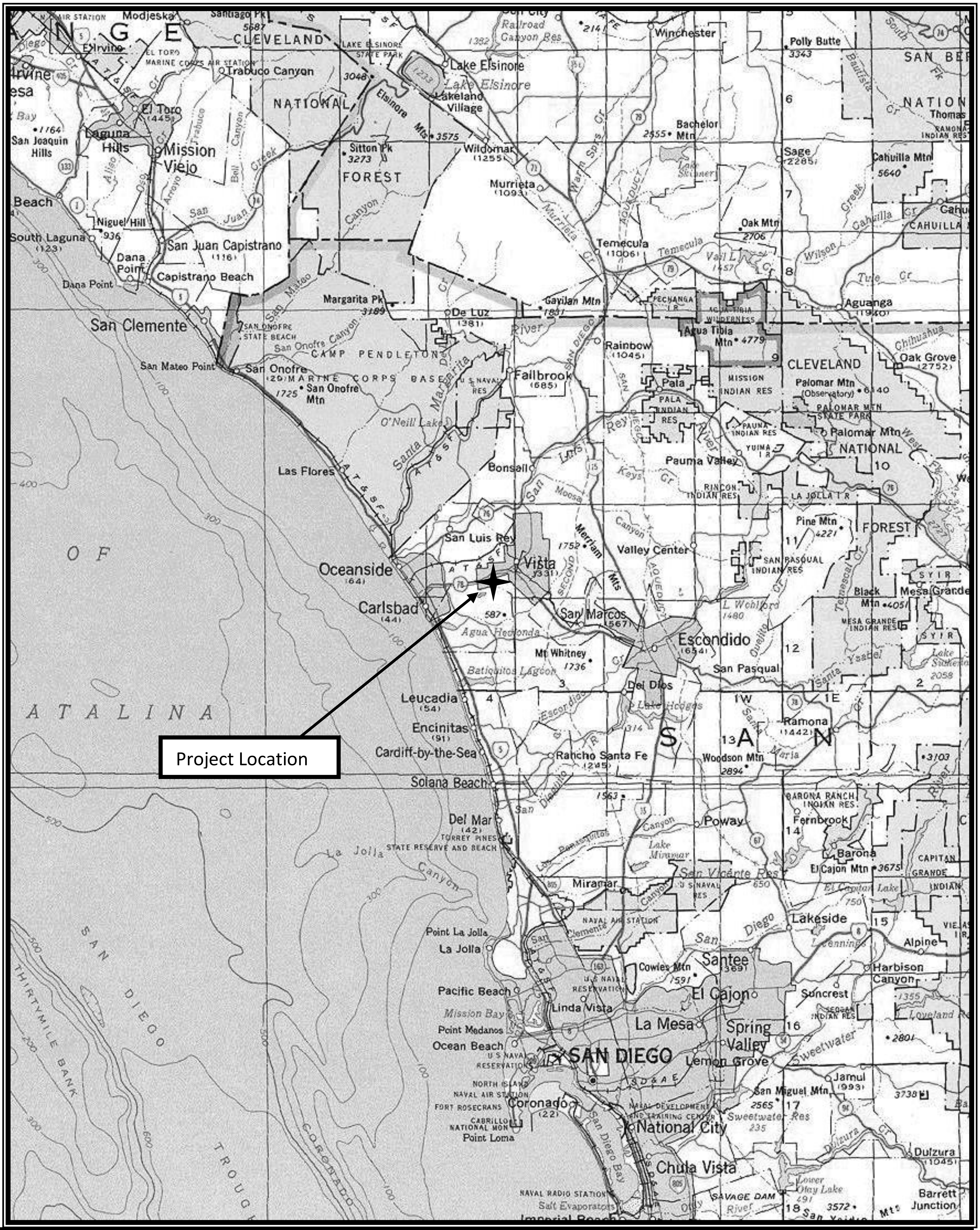

FIGURE 1: PROJECT LOCATION
SOUTHERN CALIFORNIA U.S.G.S. MAP

0 miles 8.5

N

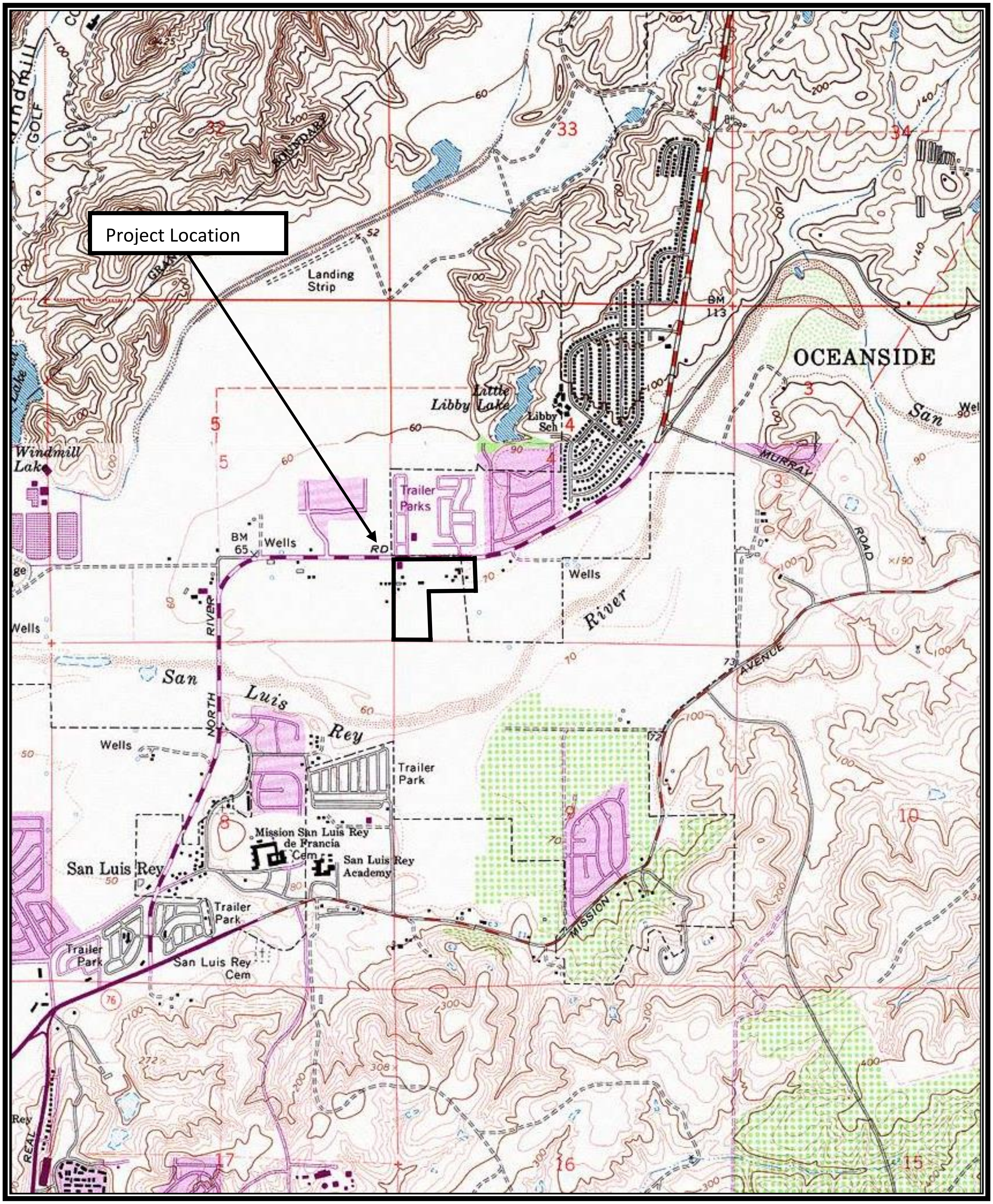

FIGURE 2: PROJECT LOCATION:
SAN LUIS REY and MORRO HILL
U.S.G.S. 7.5-MINUTE MAPS

0 feet 2000

N

Figure 3: Aerial view of the Proposed project (Google Earth)

II. SETTING

A. ENVIRONMENTAL SETTING

The Project property is situated on the north terrace of the now-channelized San Luis Rey River, approximately 5 miles from its opening to the Pacific Ocean at Oceanside Harbor and approximately 6 miles northwest of Buena Vista Lagoon at the opening of Buena Vista Creek. Prior to development, the property was part of the valley lands that bordered the River and natural vegetation may have included wetland and riparian communities. Today, the Project property is developed in agricultural fields and agriculture-related structures. The surrounding region is developed primarily in residential with light industry to the east.

B. PREHISTORIC CULTURAL SETTING

It is accepted by most archaeologists that the earliest humans traveled to the New World at the end of the Pleistocene, about ten thousand years ago (Moratto 1984). The earliest archaeological dates for occupation of southern California are approximately nine thousand to ten thousand years before the present (B.P.) (Gallegos and Carrico 1984; Kyle et al. 1990). These earliest peoples were first identified and labeled the San Dieguito complex by Malcolm Rogers, early archaeological curator at the San Diego Museum of Man. Between 1929 and 1945, Rogers conducted extensive archaeological fieldwork in Alta and Baja California and published summaries about the region's prehistory. He equated remains of the earliest hunting peoples in the Colorado and Mojave deserts (Rogers 1929, 1939) with archaeological remains he found on the coast (Rogers 1945). Rogers concluded that these earliest, San Dieguito, peoples were highly mobile, relying primarily on hunting for subsistence, an assumption still a part of current archaeological cultural-historical understanding.

Other early archaeological site types that predominate along the Alta and Baja California coasts are dense shell middens containing few finely-flaked hunting artifacts and abundant milling tools. Rogers labeled the prehistoric occupants of these sites the La Jolla Complex. From the earliest period of his work, Rogers proposed that the differences between the San Dieguito and La Jolla peoples were related to environmental changes. He emphasized that the area presented an excellent opportunity for studying the effects of changing environments on prehistoric economies and material culture (Rogers 1929). By 1945, Rogers proposed that changing adaptations reflected in the material culture remains reflected new peoples with new subsistence strategies and tool kits moving into the region (Rogers 1945).

Thus, since the earliest period of archaeology in San Diego County, the coastal lagoons have been recognized as an intensive focus of prehistoric occupation and informative location for archaeological research. Rogers identified shell midden sites on the Torrey Pines, San Elijo, Batiquitos, and Agua Hedionda lagoon margins. However, few archaeological sites in the Buena Vista and Loma Alta estuary areas were recorded in this early period of archaeological research, possibly due to the area's early development. One of the first academic archaeological studies of coastal San Diego County focused on the coastal archaeological manifestations in the Batiquitos Lagoon area. This study pioneered some of the major archaeological research approaches that were employed in the subsequent decades of the 20th century. In the early 1960s, the University of California-Los Angeles conducted a survey of Batiquitos Lagoon as well as test excavations of two sites (SDI-211 and SDI-603). This study was focused on environmental factors affecting prehistoric settlement on Batiquitos Lagoon (Crabtree, Warren, and True 1963). Radiocarbon dates from the excavations at SDI-603 suggest that the site was occupied between 7500 and 3700 years before the present (B.P.), now known as the early and middle Archaic period of Southern California prehistory. Shifts in the frequencies of artifact types were documented through the three identified strata at SDI-603. An ancillary study for this project (Warren and Pavesic 1963) proposed that changes in the environment brought about by the end of the last glaciation had major effects on the aboriginal populations of California. Drying in the interior deserts (reducing terrestrial food supplies) and rising sea levels on the coast (increasing shellfish resources) resulted in a major shift of populations from the desert to the coast. This presumably occurred between approximately 10,000 and 6,000 years ago. Subsequently, stabilization of sea level (reducing shellfish viability) resulted in populations shifting away from the coastal lagoons and a change again in subsistence pattern.

In the 1950s, D.L. True defined an inland counterpart of these early archaeological patterns in the northern reaches of San Diego County, specifically along the San Luis Rey River drainage, which opens into the Pacific Ocean southwest of the project property. He labeled it the Pauma complex. Located primarily at elevations above more recent San Luis Rey River terraces, True used geologic history as well as artifact assemblage comparisons to argue for their antiquity. Similarly to what was being discovered at the coastal lagoon archaeological sites, True's research was suggesting that differences in archaeological assemblages reflected variances in subsistence strategies adapted to differing coastal and inland environments and resources.

More recently, archaeology has also focused on defining how prehistoric populations modified their subsistence and settlement strategies to accommodate environmental changes. Based on nearly two decades of archaeological research, Dennis Gallegos synthesized radiocarbon dates and archaeological data for the entire coastal lagoon complex from Buena Vista on the north to San Diego Bay on the south (Gallegos 1993). Discovering a general trend from earlier occupation of the northern lagoons to later occupation of the southern lagoons, Gallegos concluded that prehistoric settlement patterns adjusted in relation to changes in lagoon conditions. Recently, the La Jolla period in San Diego is understood to be a part of the Archaic period of prehistory. More recent investigators have also focused on the cycles of the El Niño weather pattern that have affected the subsistence and settlement strategies of the Archaic period prehistoric occupants of the California coast (Arnold et al. 1997).

Approximately one thousand to fifteen hundred years ago, the prehistoric occupants of Alta and Baja California were faced with a new set of environmental and cultural changes. For millennia, Lake Cahuilla, an in-filling of the Salton Trough from overflows of the Colorado River, had experienced intermittent filling and drying. The archaeological record demonstrates that prehistoric peoples heavily used the lake's plant and animal resources, adapting to the varying prehistoric lake shorelines (Wilke 1978; Waters 1983; Schaefer 1994). Prehistoric peoples adapted to the final drying of the lake, documented to have occurred around A. D. 1700, by expanding their resource use in the mountain and coastal regions to the west.

Concurrent with adaptation to these regional environmental changes over the past millennium (during what archaeologists call the Late Prehistoric period) major new technologies were adopted. The first of these new technological ideas to arrive was the knowledge of how to process the acorn into an edible food staple, reflected in the archaeological record by the prevalence of deep bedrock grinding mortars and large habitation complexes situated in oak-filled mountain valleys. Also new was the bow-and-arrow, reflected in the archaeological record by the presence of small projectile points (Christenson 1990). New ideas about religion and ceremony are reflected by the replacement of internment burial patterns of the Archaic by cremation and burial of the ashes, often in pottery vessels (Rogers 1945, Wallace 1955). Finally, knowledge of the technology of pottery making moved into the Californias from the Southwest. Although the acorn-processing and bow-and-arrow technologies may have come to the mountains and coast earlier, the emergence of pottery production dates to about A.D. 800 (Carrico and Taylor 1983; Griset 1996; Wade 2007). While Rogers had labeled this most recent cultural complex the Diegueño, the name given to the local Indians by the Spanish padres, current archaeological research refers to them as Late Prehistoric peoples. Alta California Indian tribes south of the approximate dividing line of the San Luis Rey River prefer Kumeyaay; the Baja California Spanish spelling is Kumiai. Iipai/Tipai are also names that reflect a northern/southern cultural division of Kumeyaay people. In the Late Prehistoric period and into historical times, the Luiseño were associated with the San Luis Rey River, Palomar Mountain to the east, and the Temecula and San Jacinto Valleys to the north. The Cupeño and Cahuilla lived in the mountain and desert regions to the east and northeast, the Kamia, Quechan, and Cocopa to the east near and along the Colorado River, and the Paipai and Kiliwa to the south in Baja California.

Evidence of Late Prehistoric peoples in the area of the San Luis Rey River was first systematically investigated by Clement Meighan, University of California Los Angeles in 1953 (Meighan 1954). Consistent with Late Prehistoric period artifact assemblages, the investigated site contained a variety of grinding implements including bedrock mortars and pestles as well as metates and manos, small projectile points of types common in the late period and historic sites, and miscellaneous flaked stone artifacts. One pottery sherd was determined intrusive. Documentation of the San Luis Rey II complex was completed in an important report on the settlement of Molpa on the San Luis Rey River (True et al. 1974). Based on the distribution of potsherds and milling stone elements, the site was concluded to contain a small Pauma complex occupation, San Luis Rey I in the lower levels, and primarily San Luis Rey II elements in the upper levels and on the surface. The site contained a varied artifact assemblage that included flaked and ground stone artifacts (including mortars and metates), bone and shell artifacts and ornaments, and ceramic artifacts. In 1991, True summarized several decades of archaeological investigations at the Tómqav village location in the lower San Luis Rey River drainage. True proposed, based on horizontal and vertical site attributes, that the site contains limited evidence for Pauma occupation and more prevalent evidence for San Luis Rey I and San Luis Rey II occupations, noting that elements of earlier occupations may be "over-written" by later occupations. True concludes with a regional comparison of seven sites that define a San Luis Rey complex winter/summer village settlement and subsistence pattern, ranging from Bonsall on the west to Palomar Mountain on the east, stressing that further illumination of this pattern will benefit from future additions of archaeological data to the cumulative San Luis Rey II database.

The above brief review of the southern California archaeological literature, as well as data focused on the San Luis Rey River drainage region, illustrates that adaptation to environmental change has characterized ten thousand years of prehistory. The archaeological evidence demonstrates that throughout prehistory, seasonal migration from the Colorado Desert, through the peninsular mountains, to the Pacific Ocean coast, particularly along east/west drainage systems such as the San Luis Rey River, emerged as a defining element of the Alta and Baja California Indian environmental adaptation strategy.

B. ETHNOGRAPHIC SETTING

While the archaeological record provides clues to the adaptation strategies and travel and exchange activities of the Late Prehistoric Kumeyaay and Luiseño peoples, recreating cultural contexts, especially ritual and ceremonial, with only archaeological evidence is largely speculative. The ethnographic record for Alta and Baja California illuminates the cultural contexts for the archaeological record. As the following discussion will illustrate, the ethnography documents seasonal migrations, travel, and exchange as fundamental to Kumeyaay and Luiseño cultures.

Many of the early ethnographers recognized the importance of communal gatherings and ritual ceremony to the social and cultural fabric of Native Alta and Baja Californians. Early Bureau of Ethnography and University of California ethnographers sought to document the last vestiges of California native cultures. Most focused on identifying elements of social structure such as marriage conventions and lineage or clan names and locations, elements of economy such as food gathering strategies and material goods, or elements of religion such as shamanism, mythology, and ceremony. Published monographs contain considerable informant data, but only occasional attention to the regional network within which the individual systems functioned. One exception is E.W. Gifford's notes on "The Kamia of Imperial Valley." The Kamia were those Kumeyaay living in the Eastern Colorado Desert between the Mountain Kumeyaay and the Colorado River Yuma Quechan. Gifford's informants confirmed the exchange and visiting that occurred between these groups, stating that, "The Kamia visited their Diegueño kinsmen to obtain wild vegetable products, especially acorns." Katherine Luomala, in making a case for flexibility of sib (or lineage) affiliation, suggests that many sibs gather seasonally at food gathering locations. Many sibs would assemble at a central camp near the acorn-gathering areas and celebrate ceremonies together.

Almost every Yuman and Luiseño ethnographic account mentions the widely practiced *Karuk* or *Nukil*, the ceremony for the dead, and several avocational documents provide extensive description. The *Karuk* was described by Gifford for the Kamia, west of the Colorado River (1931), for the Cocopa, a Yuman tribe at the head of the Gulf of California (1934), as well for the Northern and Southern Diegueño or Kumeyaay (1918). Leslie Spier mentions the mourning ceremony as among the "Southern Diegueño Customs" (1923) but defers to the comprehensive description of Edward Davis, avocational ethnographer and collector who described Kumeyaay *Karuk* ceremonies at Weeapipe and at Cupa. Gatherings for communal food-collecting and ceremonial events, strengthening inter-lineage social and cultural ties and providing settings for exchange of goods and ideas are enumerated for the Cahuilla and Luiseño by Bean and Shipek 1978 and also described by Dubois (1908), Kroeber (1908), Sparkman (1908), and Davis 1919).

These observers note several common elements. Primary was the centrality of reciprocal relationships and gift giving and exchange to observance of the ceremony. For months before the ceremony was to happen, the entire clan prepared—gathering and storing foods, purchasing (during historical times) clothing and fabrics, and even manufacturing goods for sale to gather money. Scattered members of the clan were recalled to help. Clans with whom the ceremony-giving group had economic or social alliances were invited. These groups also brought foods and goods for exchange. These ceremonies exemplify the centrality of communal gatherings and exchange to the culture of Alta and Baja California Indians. The distribution of foods and gifts not only held together the social, cultural, and economic fabric of this world, but its interweaving with ceremonial activity drew in the spiritual world as well. By the twentieth century, when these ethnographic observations were made, gatherings and exchange in ceremonial context were still highly important, arguably even more so given the disruption from European settlement. By this time also, European goods—and indeed the Europeans themselves—were often incorporated into the exchange network.

In summary, exchange and travel were critical constituents of the Baja and Alta California Indian social and cultural fabric—adaptations for subsistence within a constantly changing environment. The archaeological evidence confirms ten thousand years of adaptation through seasonal migrations and through exchange. During the Late Prehistoric period, archaeological pottery, stone, and faunal materials document exchange between desert, mountain, and coastal peoples. The ethnographic information further illustrates that this exchange was perceived and implemented within a ritual and ceremonial context.

Ceremonies gathered relations from as far east as the Colorado River and south as Baja California. These gatherings were frequent and provided for significant exchange of goods and foods, implemented within a framework of gift-giving and reciprocity. The documentation suggests that during the historical period, culture was adapted to accommodate interactions with the Anglo world.

C. HISTORIC CULTURAL SETTING

The arrival of the Spanish colonists in San Diego Bay marked the beginning of European presence in San Diego and the end of the traditional hunter-gatherer existence of the local Native Americans. Settlement during the Spanish period focused on the Presidio defensive post at the opening of the San Diego River into San Diego Bay and on the Missions: San Diego de Alcala several miles inland on the north terrace of the San Diego River valley and San Luis Rey inland on the San Luis Rey River. The missions rapidly incorporated huge tracts of surrounding valleys and mesas into cattle and horse pasturage. The inland valleys became a part of this pasturage and were the richest grazing lands of the mission. The Mission San Luis Rey is located on the south side of the San Luis Rey River approximately one mile southwest of the North River Road Project property.

With the overthrow of the Spanish crown in 1821, San Diego became a part of the newly established Mexican republic and after the 1830s secularization of the missions, Californio ranchos were established throughout San Diego County. The Rancho Santa Margarita y Las Flores southeastern boundary is approximately one mile northwest of the Project Property and the western boundary of Rancho Guajome is approximately one-half mile east (Rush 1965).

In the 19th-century, today's North River Road forded the San Luis Rey River north of the Mission and followed along the north shore of the River first to the east and then turning northeast. As early as the 1870s, rural farmsteads established along the north and south sides of North River Road, tucked in between the Mission and two Rancho properties. At least 14 farmsteads were established along this stretch of North River Road in Sections 4 and 5 (Township 11 South/Range 4 West) by the turn of the 20-th Century (USGS Oceanside quadrangle, 1:62,500, 1901/1911).

From the late 1870s through the mid-twentieth century, the Project property area was part of a rural farming community of farmers located in the San Luis Rey River Valley. Development of San Luis Rey River Valley during the late 19th century was typical of most non-urbanized portions of San Diego County on the west side of the Peninsular Ranges. Following the Civil War, acquisition of 160 acres of land to farm became the dream and goal of thousands of young men and women in the United States as well as numerous European immigrants. They wanted to establish a home and earn a living, or benefit from rising land values that could be anticipated with increased settlement (Fite 1976). Pioneer farmers in the 1870s quickly occupied most available river valley bottom lands in San Diego County (Van Wormer 1986a, 1986b). A pioneer farmer has been defined as any agricultural producer who established in any unsettled region and began farming on any scale (Fite 1976). Pioneer farmers intended to establish agricultural communities patterned after those they had left in the east. These consisted of small towns and villages that provided at least minimal services for the surrounding farmsteads, which averaged from five to eight per square mile (Kiefer 1972). Farmers living in small rural communities were instrumental in the development of San Diego County as they fed the growing urban population and provided business for local markets

Wheat became the chief crop of pioneer farmers during initial settlement. Grains could be planted with little investment and offer a quick cash return at the end of the season. The 1860s and 1870s saw a period of experimental cultivation in southern California in attempts to find crops other than wheat that could successfully be grown and marketed. Completion of railroads to the east in the 1870s and 1880s, combined with cultivation of olives, oranges, and grapes, provided the solution. By the early 1880s, farmers discovered that moderate slopes and hills were better for cultivation of vines and fruits than valley bottom lands. The year 1882 saw the introduction of these methods to San Diego County and marked the beginning of commercial fruit cultivation. Structural components of the farmsteads varied with each individual farmer but generally consisted of a frame or adobe house that could range in style from a modest two-room vernacular structure to a large Victorian home. Common types of outbuildings included barns, granaries, other storage areas, shops, spring houses, livestock pens, gardens, cow lots, cisterns, wells, and privies (Van Wormer 1986a, 1986b).

During this late nineteenth-century pioneer-farming settlement period, William H. Libby, on June 7, 1877, obtained a U.S. Land Patent for 160 acres encompassing the south half of the southeast quarter of Section 5 and the west half of the southwest quarter of Section 4, Township 11 south Range 4 West (Patent Book 1, page 383, 6/7/1877). The acreage included the stretch of land north of San Luis Rey River and south of North River Road, between the point where the road travels north from Mission San Luis Rey and the point where turns northeast, as well as a section north of River Road where the road proceeds northeast. The current Project property was at the eastern end of this patent. The Libby family were pioneer farmers through several generations. "William E. and Catherine Higgins Libby came to the San Luis Rey Valley as early as 1871. With them they brought their son, Benjamin Franklin Libby who married Margaret Stone in 1874. They had four daughters Emma, Anne, Katherine, and Cora. B. F. Libby was an early rancher and school teacher. Daughter Grace married Charles Gosforth Porteous on February 27, 1893 at All Saint's Episcopal Church in the first wedding there. Their son Laurie Porteous would later work for the Bank of Oceanside. Emma married Aristedes E. Stokes who established a dairy in the San Luis Rey Valley in 1921" (Hawthorne 2000:19). The Libby family held the original patent until executing a Grant deed to the California Mortgage Loan and Trust Company, in 1894, for the acreages in Section 4. The Section 4 acreages, which contain the current Project property, were subsequently owned from 1896 until 1906 by several members of the Ramsey family as well as being a part of the investment land holdings of Lincoln University of Pennsylvania. The land apparently returned to the Libby descendants for seven years when great-grandson, Laurie Porteous, obtained a Grant Deed (1920 to 1927). Subsequent owners were Joseph S. and Edubijes Alvarado (1927-1936), William and Marjory Carter (1936 -1945), and John and Ludvina Morgado (1945-1947). The Kawano and Nagata families purchased the current Project property from Morgado in 1947 (Deeds 1896-1947).

The only structures on the land originally patented by Libby, at least until 1938, are approximately one-half mile to the west of the current Project property, in Section 5. The remainder of the acreage, including the Project property is in plowed fields through 1938 (aerial photographs 1928 and 1938). The Project property remains agricultural fields until 1947 when purchased by the Kawano and Nagata families. At the end of World War II, in 1947, brothers George Takamasa and Harry Hisashi Nagata and Frank Y. Kawano returned from internment in Poston Arizona, after several years of farming in Colorado, and partnered to purchase the two 40-acre parcels at the southeast corner of the original Libby land patent (Deeds, Book 2491, page 13, 9/4/1947).

1. Kawano Property

Frank Y. Kawano was born in 1922 and attended Oceanside High School. After purchasing the 4665 North River Road parcel in 1947, he began farming with his brothers in the San Luis Rey Valley area (San Diego Union 2009). By 1953 (aerial photograph 1953), the Kawanos had constructed structures on the eastern property boundary, a residence and associated structures on the west-central portion of the property, and three rectangular warehouses in the center of the property. The western approximately one-third of the current property ownership and the southern approximately one-half (which has subsequently been sold) was in agriculture. In 1960, the business was incorporated as Kawano, Inc. and Frank and his wife June granted the property to the corporation. By 1975, Kawano was farming five ranches: San Luis Rey, Vandergrift East and Vandegrift West (Lomas East and Lomas West) Bonsall, and Carlsbad (Kawano Inc. v. United Farm Workers of America AFL CIO6/12/1980). Warehouses were removed and new warehouse buildings were added by 1979 (aerial photograph 1979), although the west-central residence remained in existence. The Frank Kawano residence, the warehouses, and the western agricultural field are the basic property configuration that remains today. In 1980, Kawano Inc. was described as growing "truck crops such as tomatoes, strawberries and cauliflower on land in San Diego County, some owned and some leased. Its president, chiefly responsible for management decisions, is John Kawano, assisted in operating the business by other family members, including his brother Harry Kawano. … Kawano headquarters are located at its 200-acre San Luis Rey Ranch, where it maintains a small administrative office staffed by three women and managed by John's nephew Ron Mizushima. … The four Kawano brothers, who are petitioner's sole shareholders (John, Frank, Raymond, and Harry) have farmed in north San Diego County since 1946, and petitioner was incorporated in 1960. (Kawano Inc. v. United Farm Workers of America AFL CIO6/12/1980). Apparently, economic issues around this time resulted in a scaling-down of Kawano, Inc and in 1981 the corporation granted the 4665 North River Road property back to several of the Kawano Brothers and Sales Manager Frederick L. Williamson (Deeds 1/6/1981, The Produce News 2007). From 1987 to 1995, Robert L. Astleford acquired the titles to the property. Astleford "worked for Kawano Farming and maintained a long association and friendship with the Kawano family" (San Diego Union Tribune 10/14/2012). The structures along the eastern property boundary were removed by 1989 (aerial photograph 1989). In 1995, the property was transferred to Freshpac International, Inc. which currently maintains its Oceanside headquarters at the 4665 North River Road property (Fresh Pac International website 2009). An office, warehouses, and the agricultural plots from the 1979 era are currently located on the property. The only remaining structure of greater than 50 years in age (likely dating between 1948 and 1953) is the Frank Kawano residence.

2. Nagata Property

George Takamasa Nagata, Harry Hisashi Nagata, and Mitsura Nagata were born in Gardena, California in 1924 to Matasaburo and Yatsu Nagata from Kumamoto, Japan. During their youth, they assisted their father farming strawberries, blackberries, and assorted vegetables. In 1942, the Nagata family were evacuated and interned in Poston, Arizona. Once Japanese Americans were allowed to move back to California, and after a period of farming in Colorado, the brothers moved to Oceanside, California, where they partnered with the Kawano brothers to purchase the two River Road parcels in 1947 (The San Diego Union Tribune 8/2/2016, Nisei Week Foundation 2015).

By 1953, the brothers had constructed 2 residences (one for the George Nagata family, now destroyed, and one for the Harry Nagata family, still in existence) and a packing shed on the west central portion of the property. The remainder of the property was in agriculture (aerial photographs 1953). In 1954, the brothers formed a co-partnership, Nagata Bros. (Deeds Book 5455 page 509, 9/9/1954), becoming a General Partnership in 1991 (Recorders File No. 1991-0258988, 6/3/1991). In 1967, one of the western structures is gone and an additional structure, possibly a warehouse, was added.

As well, another house was built at the east central boundary of the property and a Notice of Completion was filed in 1961 for the driveway along the eastern boundary of the Nagata Bros. property to the 1960s house (aerial photographs 1967, Notice of Completion, Recorders File No. 156814, 9/8/1961). Neil Nagata states that this house was built for his grandmother Yatsu Nagata. In 1979, a warehouse was constructed at the northern property boundary (aerial photographs 1979). Neil Nagata states that his uncle, Harry Nagata, moved from the property in 1972 and that the George Nagata family moved from the property in 1983 (their house was subsequently destroyed). On 9/25/2013, a fire destroyed the 1960s warehouse and any structures that may have remained in this area.

The Nagata family has continued to utilize the property for agricultural activities, most recently raising organic crops on the property. One of the brothers, Harry Nagata, passed away in 2016. "He was able to do what he loved the entire time he lived in the county--farming, creating Nagata Bros. Farms with his brothers George and Mits. He always was and will be a farmer" (The San Diego Union Tribune 8/2/2016). In 2015, George Nagata was honored by the Nisei Week Foundation for his contributions to the agriculture industry. "…he was critical to the innovation and development of novel techniques in strawberry and tomato production. One of the key periods in his career was in 1951 when he went to University of California, Davis, to create a Southern California field station to assist in strawberry growing. … Nagata worked with researchers to become one of the earliest adapters of the drip irrigation system. … Nagata was also a pioneer in growing fruits and vegetables, specifically strawberries, in Baja, California. … He also served as a board member and became vice chairman of the California Tomato Advisory Board and was a board member of the California Strawberry Advisory Board" (Nisei Week Foundation 2015). His son, Neil, has continued to be a leader in the local agricultural industry, being President of the San Diego Farm Bureau and an advocate for locally-grown produce enterprises and farmers markets.

The property is currently owned by Nagata Brothers, LLC. A modern warehouse, the Yatsu Nagata and Harry Nagata residences, the agricultural fields from 1960s-1970s era, and the burned remnants of the circa 1950s packing shed and George Nagata family residence are currently located on the property. The only 2 remaining buildings of greater than 50 years in age (dating between the early 1950s and early 1960s) are the Harry Nagata and Yatsu Nagata residences.

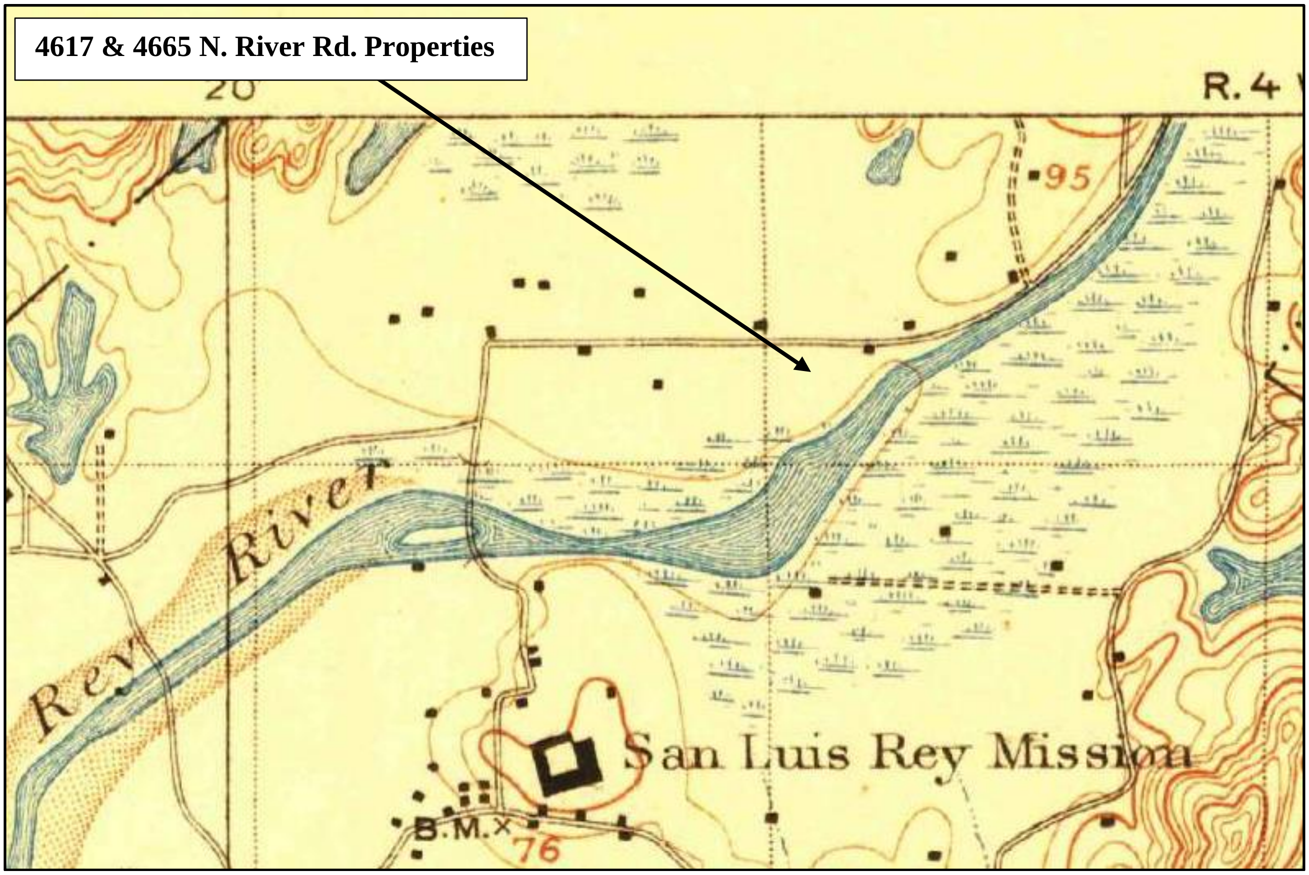

Figure 4 Proposed Project Location on U.S.G.S. Quadrangle Oceanside, 1:62500, 1901

Figure 5 Proposed Project Location on 1928 Aerial Photograph

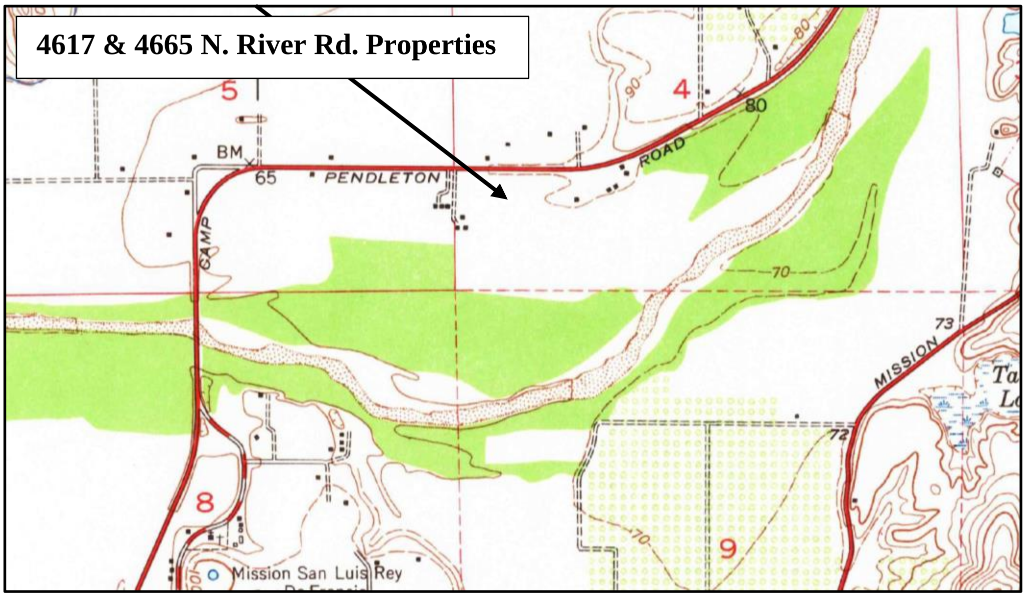

Figure 6 Proposed Project location on U.S.G.S. Quadrangle San Luis Rey 1:24000, 1948

Figure 7 Proposed Project Location on 1938 Aerial Photograph

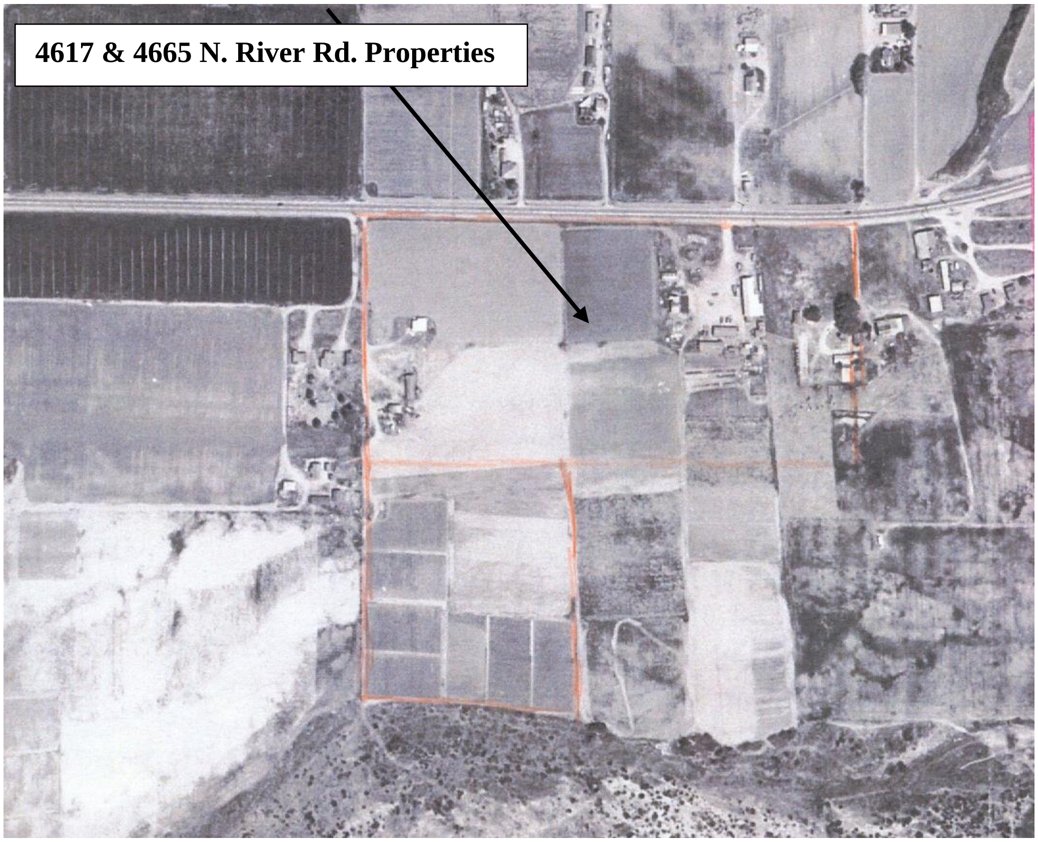

Figure 8 Proposed Project Location 1953 Aerial Photograph

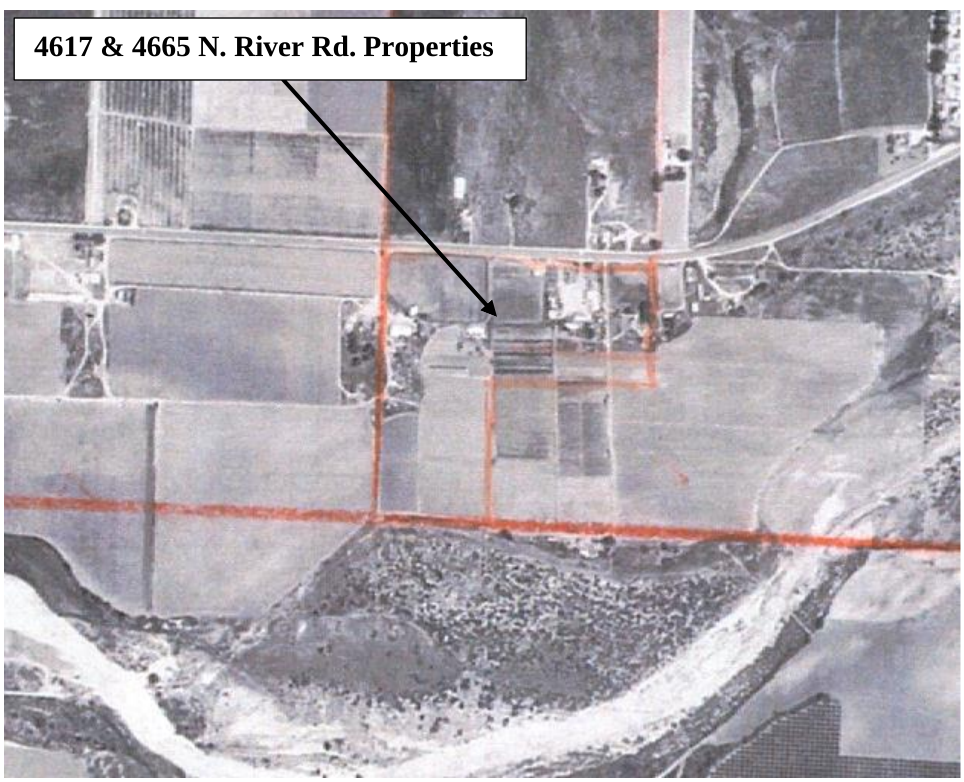

Figure 9 Proposed Project Location on 1967 Aerial Photograph

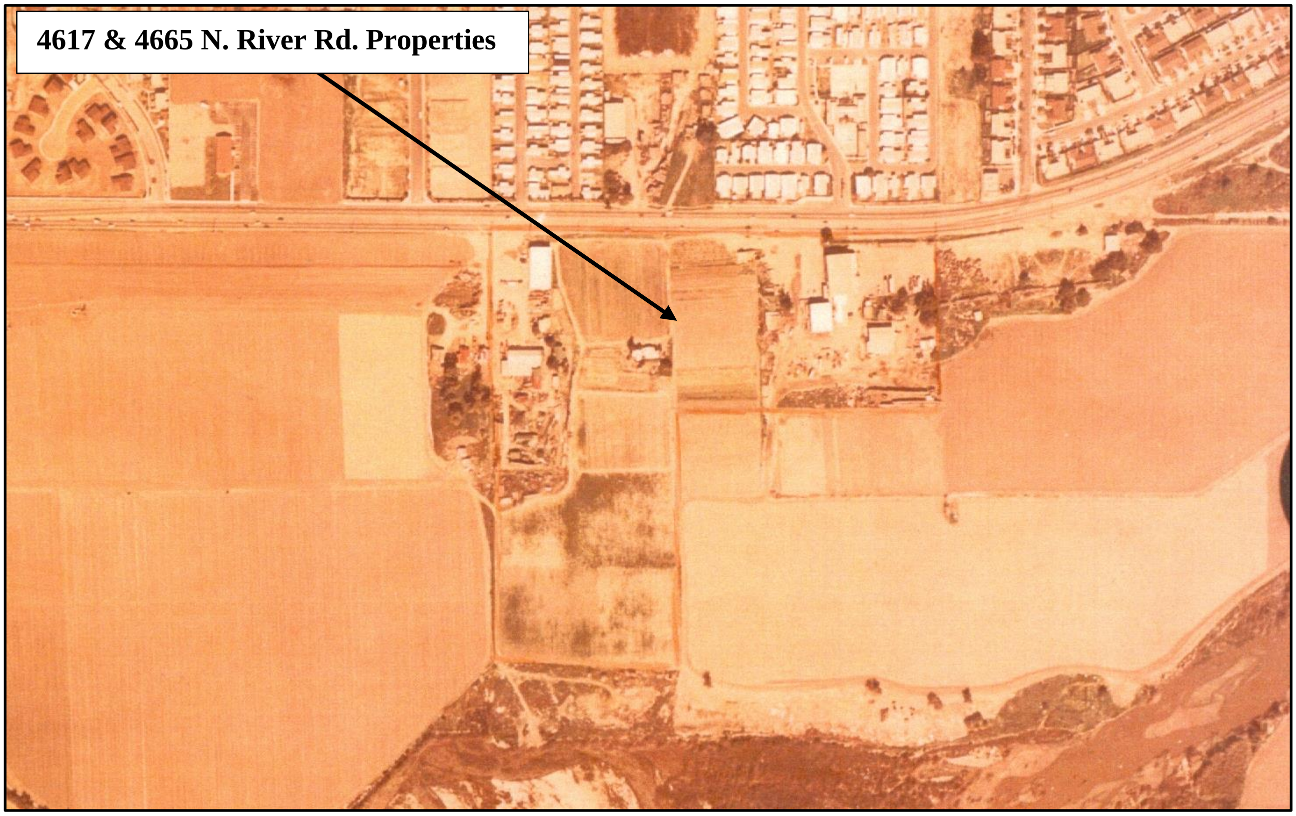

Figure 10 Proposed Project Location on 1979 Aerial Photograph

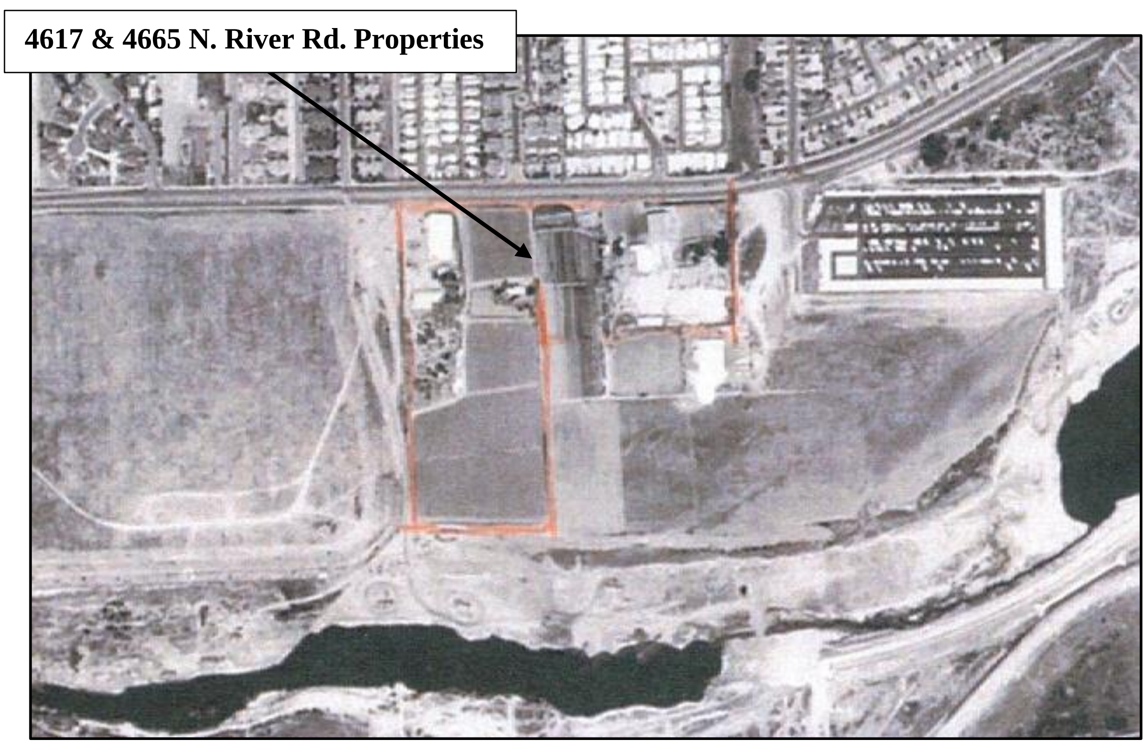

Figure 11 Proposed Project Location on 1989 Aerial Photograph

D. RECORD SEARCH RESULTS

A one-mile radius record search was conducted by the South Coastal Information Center (SCIC). Ninety-two cultural resource projects have been conducted within the one-mile radius. Eight of these studies are related to Caltrans highway improvement projects, seventeen projects address infrastructure improvements mostly related to river flood control, twenty-three concern Mission San Luis Rey and environs and Rancho Guajome, and the remainder involve private development projects. Five are located in close proximity to the proposed Project, but had negative results. These studies are itemized in Table 1 below.

These archaeological projects resulted in the recordation of 24 cultural resources. Seven sites are associated with the Mission San Luis Rey and environs. Eleven locations of sparse or isolated prehistoric artifacts, recorded between 1971 and 1990, were described as heavily disturbed or destroyed by agricultural or development activities. Three prehistoric sites are mapped in areas now developed, two recordings were isolated artifacts, and one historic recording is the San Luis Rey Wastewater Treatment facility evaluated as 6Z "found ineligible for NR, CR, or local designation through survey evaluation." These recorded sites are itemized in Table 2 below.

In summary, the record search results indicate that many sensitive archaeological sites are associated with the Mission San Luis Rey and a surrounding area of approximately 0.5 mile on the south side of the San Luis Rey River. The remaining three archaeological sites recorded southeast of the proposed Project south of the San Luis Rey River and the ten archaeological sites north of the proposed Project and the San Luis Rey River were heavily impacted by agricultural and development activities. Based on the archaeological report summaries, resource record forms, and a review of land uses depicted on Google Earth, it is likely that few if any still exist. Of interest, there are no archaeological resources recorded closer than 0.4 mile to the Proposed project. It is also interesting to note that despite much of the record search area being located in alluvial and possibly depositional environments, no mention is made of discovery of buried deposits.

Table 1: Cultural Resource Projects within One Mile of the Proposed Project

Report #	Author	Date	Report Title	Resources Recorded
SD-00032	Dominici, Debra A.	1989	Archaeological Survey Report for the Highway 76 Widening and New Alignment Project San Diego County, 11-SD-76, P.M. R2.41R4.7, 11223-910054, P.M. R4.5/R6.2, 11222-010010, P.M. R6.4/R7.2, 11222-10030, P.M. 3.6/4.2, 11222-18403G.	37-001246, 37-001272, 37-005422, 37-005445, 37-005508, 37-007787, 37-011461, 37-011462
SD-00257	Carrico, Richard and Clifford V. Taylor	1977	Archaeological Investigations of the Orchard Creek Project Oceanside, California.	37-005130, 37-005131, 37-005132
SD-00266	Cardenas, Sean D.	1989	Cultural Resource Survey and Assessment for the Oceanside Emergency Housing Shelter (DSC Job No. 89-06).	37-005422
SD-00440	Chace, Paul G.	1977	An Archaeological & Historical Survey of the Williams Property (San Luis Rey), Oceanside, California.	37-000241
SD-00454	Corum, Joyce M.	1982	First Addendum Archaeological Survey Report for a Proposed Auxiliary Lane Extension in Oceanside 11-SD-78 0.0/3.1 11206-086121.	37-009472, 37-009473
SD-00577	Carrillo, Charles	1982	Map for Highway Alternatives Study 11-SD-76 0.012.9 11821-159021	
SD-00598	Cottrell, Marie	1977	Ivy Ranch, San Luis Rey, California	37-000241
SD-00824	Gallegos, Dennis, Carolyn Kyle, and Roxana Phillips	1990	Cultural Resource Inventory and Testing of Prehistoric/Historic Site MO-1 Oceanside, California	

Table 1: Cultural Resource Projects within One Mile of the Proposed Project (cont.)

SD-00849	Kyle, Carolyn and Dennis Gallegos	1990	Cultural Resource Survey of the Pala Road Subdivision Oceanside, California	
SD-00973	Fink, Gary R.	1980	"Rancho Guajome: Window on the Past" A Test of the Historic Resources at the Casa de Rancho Guajome	37-005992
SD-01070	Franklin, Randy and Richard L. Carrico	1978	A Preliminary Archaeological Reconnaissance for a Proposed Flood Control Project in the Lower San Luis Rey River Drainage.	37-005131, 37-005133, 37-005422
SD-01082	Flower, Douglas, Darcy Ike, Linda Roth, and Susan Sapone Varner	1979	Archaeological Investigation of the Mira Costa Estates Project, Oceanside, California W-1256A, B, C, &D W-1257.	37-004979, 37-004980, 37-004981, 37-004982, 37-004993
SD-01306	Norwood, Richard H.	1978	An Archaeological Survey for Whelan Ranch.	
SD-01320	McCoy, Lesley C. and Jay Thesken	1979	Archaeological Survey of the Rancho Del Oro Property, Oceanside, California	37-005508
SD-01410	Rosen, Martin D.	1984	Biological Mitigation Parcels for State Route 76 11-SD-76 R0.0/R2.9 11206-159020	
SD-01677	Wade, Sue A. and Susan M. Hector	1989	A Cultural Resource Survey of the Loma Alta Creek Improvement Plan Area	
SD-01726	RBR & Associates, Inc.	1988	Extended Initial Study of the New Municipal Facilities Yard for Oceanside, California	
SD-01733	Pigniolo, Andrew, Dennis Gallegos, and Richard Carrico	1986	Cultural Resource Survey of Oak Grove Villas/The Ridge Estates, Oceanside, California	
SD-01825	Carrico, Richard and Terri Jacques	1984	Cultural Resource Survey and Assessment of the Mission Well Project Oceanside, California	
SD-01870	Hector, Susan	1985	Archaeological Survey of Riverside Business Park	
SD-01974	Robbins-Wade, Mary and Karlene Leeper	1989	Cultural Resources Inventory: Whelan Property Acquisition Oceanside, California	37-011468, 37-011469, 37-011470
SD-02189	KELSEY,HARRY AND MAGALOUSIS, NICHOLAS	1991	ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS AT MISSION SAN LUIS REY,CALIFORNIA CA-SDI-241 SECTOR C FOR THE PEYRI ROAD WATER LINE PROJECT(711-85-7850)OF THE CITY OF OCEANSIDE WATER UTILITIES DEPARTMENT	37-000241
SD-02216	MAGALOUSIS,NICHOLAS AND HARRY KELSEY	1991	MISSION SAN LUIS REY PARISH CENTER AUDITORIUM-GYMNASIUM ADDITION CA-SDI-5422 ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS	37-000241, 37-005422
SD-02448	ROSEN, MARTIN and JUDITH TORDOFF	1991	EXTENDED PHASE I INVESTIGATIONS AT CA-SDI-5422	37-005422
SD-02464	CORUM, JOYCE	1990	EXTENDED PHASE I INVESTIGATION AT SITES CA-SDI-1272, 5445, 5508, AND 7787 11-SD-76	37-001272, 37-005445, 37-005508, 37-007787
SD-02542	PIGNIOLO, ANDREW	1992	CULTURAL RESOURCE SURVEY OF AN ADDITIONAL 3 ACRE PARCEL TESTING OF SITE CA-SDI-12464H AND REVIEW OF THE RANCHO DEL ORO BILLAGE V11/TOWN CENTER NORTH PROJECT	37-001272, 37-001273, 37-005508, 37-012464
SD-02574	CRAFTS, KAREN	1992	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT FIRST ADDENDUM INTERCHANGE OF ROUTE 78 AND INTERSTATE 5 IN OCEANSIDE	
SD-02590	MAGALOUSIS, NICHOLAS and HARRY KILSEY	1992	PRELIMINARY ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS AT MISSION SAN LUIS REY CA-SDI-241, SECTOR D	37-000241
SD-03166	GROSS, TIMOTHY, MARY ROBBINS-WADE, and RUTH C. HILTER	1994	ARHAEOLOGICAL TESTING FOR PROPOSED FRIARY MISSION SAN LUIS REY, SDI 241 SAN DIEGO COUNTY, CALIFORNIA	37-000241
SD-03232	ALTER, RUTH C. and GEORGE TIMOTHY GROSS	1995	CULTURAL RESOURCES SURVEY OF THE CANYON VISTA PROJECT OCEANSIDE, CA	
SD-03409	City of Oceanside and RECON	1995	DRAFT EIR FOR THE SAN LUIS REY WASTEWATER TREATMENT PLANT INTERIM EXPANSION	
SD-03509	ROBBINS-WADE, MARY and RUTH C. ALTER	1999	ARCHAEOLOGICAL RESOURCES INVENTORY FOR THE MONARCH POINT PROPERTY, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-03575	BISSELL, RONALD M.	1999	EVALUATION OF THE J.P. HIGGINS HOMESTEAD, CA-SDI-14610H, WITHIN THE PROPOSED GREGORY CANYON LANDFILL STUDY AREA. NEAR PALA, SAN DIEGO COUNTY, CALIFORNIA	37-016049

Table 1: Cultural Resource Projects within One Mile of the Proposed Project (cont.)

SD-03583	WAHOFF, TANYA and REBECCA MCCORKLE APPLE	1999	CULTURAL RESOURCE MONITORING FOR THE SAN DIEGO GAS & ELECTRIC (SDG&E) C-190 SAIDI TOP 50 RECABLE PROJECT, SAN DIEGO COUNTY, CALIFORNIA	37-005422
SD-03731	ROBBINS-WADE, MARY	1997	ARCHAEOLOGICAL RESOURCE INVENTORY FOR THE AUTO AUCTION NORTH EXPANSION, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-03743	ROBBINS-WADE, MARY	1999	ARCHAEOLOGICAL RESOURCES INVENTORY FOR THE SAN LUIS REY ACADEMY PROPERTY, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	37-005422
SD-04341	KYLE, CAROLYN	1990	CULTURAL RESOURCE INVENTORY AND TESTING OF PREHISTORIC/HISTORIC SITE MO-1 OCEANSIDE, CA	
SD-04795	MORATTO, MICHAEL J. and ROBERTA GREENWOOD	1991	DRAFT HISTORIC PROPERTIES TREATMENT PLAN SAN LUIS REY RIVER FLOOD CONTROL PROJECT	37-005130, 37-005133, 37-006014, 37-006015
SD-04903	Martin, Rosen and Judith D. Tordoff	1991	Extended Phase I Investigations at CA-SDi-5422, City of Oceanside, California	
SD-04905	Corum, Joyce	1990	Extended Phase I Investigation at Sites CA-SDi-1272, 5445,5508, and 7787	37-001272, 37-005445, 37-005508, 37-007787
SD-04935	ROSEN, MARTIN	1990	PHASE II, ARCHAEOLOGICAL TEST EXCAVATION REPORTS, "THE JONES SITE", CA-SDI-11, 687, CITY OF OCEANSIDE ,CA.	37-011687
SD-04936	CORUM, JOYCE	1991	PHASE II ARCHAEOLOGICAL TEST EXCAVATION AT STIE CA-SDI-5445, CITY OF OCEANSIDE, CA 11-SD-76 P.M. R2.4/R7.2	37-005445
SD-04941	RECON	1977	DRAFT ENVIRONMENTAL IMPACT REPORT FOR MURRAAY MISSION	
SD-05099	ROBBINS-WADE, MARY	2002	CULTURAL RESOURCES INVENTORY, DOUGLAS DRIVE CONDOMINIUMS, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-05225	TOREN, GEORGE	1996	Supplemental Report for July-August 1996: Archaeological Monitoring Program: the Liturgical Center @ San Luis Rey Academy	37-000241, 37-005422
SD-05305	SCOTT, GLORIA	1990	HISTORICAL ARCHITECTURAL SURVEY FOR HIGHWAY 76 WIDENING & NEW ALIGNMENT PROJECT OCEANSIDE, SAN DIEGO COUNTY	
SD-05863	BULL, CHARLES S.	1977	AN ARCHAEOLOGICAL SURVEY OF MURRAY MISSION OCEANSIDE, CALIFORNIA	
SD-06082	FORD, DEBORAH	1996	SOUTHWEST COMMUNITY BANK AT 277 NORTH EL CAMINO REAL ENCINITAS, CALIF. 92024	
SD-06779	CALTRANS	1989	ARCHAEOLOGICAL SURVEY REPORT FOR THE HIGHWAY 76 AND NEW ALIGNMENT PROJECT	37-000241, 37-001246, 37-001266, 37-001267, 37-001268, 37-001272, 37-001273, 37-005130, 37-005141, 37-005308, 37-005422, 37-005445, 37-006023, 37-006024, 37-007787, 37-008088, 37-008089, 37-010078, 37-010079, 37-010080, 37-010559, 37-010560, 37-011462, 37-011464
SD-07314	CHEEVER, DAYLE	1999	CULTURAL RESOURCES SURVEY REPORT FOR THE SAN LUIS REY WASTEWATER TREATMENT PLANT	37-011468, 37-011470
SD-07410	PALLETTE, DREW	2002	CULTURAL RESOURCE STUDY FOR 4466 PALA ROAD, OCEANSIDE, CALIFORNIA	37-001264, 37-001266, 37-001272, 37-001273, 37-005422, 37-005508, 37-010078, 37-011961, 37-012464, 37-016500
SD-07540	ROBBINS-WADE, MARY	1990	ARCHAEOLOGICAL SURVEY REPORT: FOR THE ANGLO-AMERICAN AUCTION PROPERTY	
SD-07657	WESTEC SERVICES, INC and R.L. FRANKLIN	1979	CULTURAL RESOURCE TEST SAMPLING PROGRAM FOR A PROPOSED FLOOD CONTROL PROJECT IN THE LOWER SAN LUIS REY RIVER DRAINAGE, OCEANSIDE, CALIFORNIA	
SD-07722	CALTRANS	1984	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT: 11-SD-76 R 0.0/R 2.9	

Table 1: Cultural Resource Projects within One Mile of the Proposed Project (cont.)

SD-08469	CARRICO, RICHARD L. and R.L. FRANKLIN	1979	CULTURAL RESOURCE TEST SAMPLING PROGRAM FOR A PROPOSED FLOOD CONTROL PROJECT IN THE LOWER SAN LUIS REY RIVER DRAINAGE, OCEANSIDE, CA	
SD-08733	CARRICO, RICHARD, TERRI TACQUES, and DENNIS GALLEGOS	1986	MISSION WELLS DRAFT APPENDICES-CULTURAL RESOURCES SURVEY AND ASSESSMENT OF THE MISSION WELLS PROJECT OCEANSIDE, CALIFORNIA	
SD-08740	HAMPSON, R. PAUL and PORTIA LEE	1993	ARCHAEOLOGICAL AND ARCHITECTURAL INVESTIGATIONS FOR THE LITURGICAL CENTER AT SAN LUIS REY ACADEMY	
SD-08743	CHACE, PAUL G.	1977	AN ARCHAEOLOGICAL AND HISTORICAL SURVEY OF THE WILLIAMS PROPERTY (SAN LUIS REY), OCEANSIDE, CA	
SD-08749	WESTEC	1988	MISSION DEL ORO FINAL ENVIRONMENTAL IMPACT REPORT (T-43-86; D-91-86; H-1-87; Z-21-86;T-44-86; D-92-86)	
SD-08751	BULL, CHARLES	1977	AN ARCHAEOLOGICAL SURVEY OF MURRAY MISSION OCEANSIDE, CALIFORNIA	
SD-08884	CROUTHAMEL, STEVEN and JOEL PAULSON	2003	SAN LUIS REY PIONEER CEMETERY: AN ARCHAEOLOGICAL & HISTORICAL ASSESSMENT, OCEANSIDE, CALIFORNIA	
SD-09470	Cooley, Theodore G. and Richard L. Carrico	2004	Cultural Resources Inventory Report for Four San Luis Rey Land Outfall Pipeline Route Alternatives, City of Oceanside, California	37-026342
SD-09516	Caterino, David	2005	The Cemeteries and Gravestones of San Diego County: An Archaeological Study	
SD-09520	Robbins-Wade, Mary	2005	San Luis Rey Transit Center - Cultural Resources (Affinis Job No. 2015)	
SD-09610	Robbins-Wade, Mary	2005	Diamond Homes Tentative Subdivision Map-Archaeology (Affinis Job No. 2053)	
SD-09675	Smith, Brian F. and Seth A. Rosenberg	2005	An Archaeological Investigation for the San Luis Rey Crossing Project	37-026841
SD-10095	BISSELL, RONALD	1995	CULTURAL RESOURCES RECONNAISSANCE OF THE OCEANSIDE II PROPERTY (PARCEL 157-020-37) OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-10427	ROBBINS-WADE, MARY	2006	ARCHAEOLOGICAL RESOURCES STUDY, SAN LUIS REY TRANSIT CENTER, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	37-011970
SD-10596	ROBBINS-WADE, MARY	2007	PRESIDIO CONDOMINIUMS PROJECT - CULTURAL RESOURCES (AFFINIS JOB NO. 2196)	
SD-11023	VARIOUS		MISSION SAN LUIS REY	37-005422
SD-11134	ROBBINS-WADE, MARY	2007	CULTURAL RESOURCES SURVEY, THE FELLOWSHIP CENTER, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-12346	WILLIAMS, JACK S.	2004	AN ARCHAEOLOGICAL INVESTIGATION OF THE SUNKEN GARDENS OF MISSION SAN LUIS REY PART I: SETTING AND HISTORICAL BACKGROUND	
SD-12348	WILLIAMS, JACK S.	2004	AN ARCHAEOLOGICAL INVESTIGATION OF THE SUNKEN GARDENS OF MISSION SAN LUIS REY PART III: THE ARCHAEOLOGY OF THE SUNKEN GARDENS	
SD-12349	WILLIAMS, JACK S.	2003	PRESERVATION RECOMMENDATIONS: SUNKEN GARDENS OF SAN LUIS REY MISSION	
SD-12350	CITY OF OCEANSIDE	2005	ENVIRONMENTAL ASSESSMENT OF THE MISSION SAN LUIS REY WATERLINE, OCEANSIDE, CALIFORNIA	
SD-12352	HITTLEMAN, JERRY	2003	MITIGATED NEGATIVE DECLARATION FOR THE MISSION SAN LUIS REY WATERLINE PROJECT	
SD-12353	WILLIAMS, JACK S.	2001	SAN LUIS REY ARCHAEOLOGY - WATER PIPE PROJECT - CA-SDI-241 - PRELIMINARY FINDINGS	37-000241
SD-12437	MOOMJIAN, SCOTT A.	2009	HISTORICAL ASSESSMENT OF THE THOMAS & MARY MCCUTCHEON / ANGEL HOUSE 15880 VIA DEL ALBA, RANCHO SANTA FE, CALIFORNIA 92067	

Table 1: Cultural Resource Projects within One Mile of the Proposed Project (cont.)

SD-12683	UNDERWOOD, JACKSON	2009	ARCHAEOLOGICAL MONITORING REPORT ADDENDUM TO: FINAL ARCHAEOLOGICAL TESTING FOR THE MISSION SAN LUIS REY WATERLINE PROJECT, SAN DIEGO COUNTY, CALIFORNIA	
SD-12982	GREENWOOD AND ASSOCIATES	2011	OUR LADY OF GUADALUPE SPORTS COURTS AND PARKING LOTS, ARCHAEOLOGICAL ELEMENT REVIEW	37-000241, 37-005422
SD-13805	ROBBINS-WADE, MARY	2000	OLD GROVE MARKETPLACE	37-000241, 37-005422, 37-010559
SD-13813	ROBBINS-WADE, MARY	2000	CALLE MONTECITO ARCHAEOLOGY (AFFINIS JOB NO. 1465)	
SD-14069	NI GHABHLAIN, SINEAD	2011	CULTURAL AND HISTORICAL RESOURCE STUDY FOR THE CITY OF OCEANSIDE GENERAL PLAN- CIRCULATION ELEMENT UPDATE PROGRAM ENVIRONMENTAL IMPACT REPORT (PEIR)	37-005130, 37-005508, 37-011687, 37-014227, 37-015694, 37-027452, 37-028351
SD-14490	DAVISON, KRISTINA and MARY ROBBINS-WADE	2013	TALONE LAKE VECTOR CONTROL PROJECT (AFFINIS JOB NO. 2552)	37-001272
SD-15421	Mary Robbins-Wade	2013	Cultural Resources Survey and Assessment, Mission/Academy Planned Development Plan, Oceanside, San Diego County, California.	
SD-15474	Kristin Tennesen	2015	eTS #29758, Cultural Resources Survey for the AES Battery Storage Morro Hill Substation Project, San Diego County, California	
SD-15667	Phil Fulton	2014	CULTURAL RESOURCE ASSESSMENT CLASS III INVENTORY, VERIZON WIRELESS SERVICES, OCEANSIDE MUNICIPAL FACILITY, CITY OF OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-15895	Mary Robbins-Wade and Andrew Giletti	2015	VILLA STORIA PROJECT, CULTURAL RESOURCES ASSESSMENT: CA-SDI-5422	
SD-16874	WILLS, CARRIE D. and WILLIAMS, SARAH A.	2016	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR CELLCO PARTNERSHIP AND THEIR CONTROLLED AFFILIATES DOING BUSINESS AS VERIZON WIRELESS CANDIDATE 'MOONSTONE BAY', 825 DOUGLAS DRIVE, OCEANSIDE, SAN DIEGO COUNTY, CALIFORNIA	
SD-16983	HAAS, H.	2017	SAN LUIS REY WATER RECLAMATION FACILITY EXPANSION PROJECT, SAN DIEGO COUNTY, CALIFORNIA	37-011470, 37-037110
SD-17393	GARCIA-HERBST, ARLEEN	2017	CULTURAL RESOURCES INVENTORY FOR THE VILLA AT MISSION SAN LUIS REY CONTINUING CARE RETIREMENT COMMUNITY, CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, CALIFORNIA	37-000241
SD-17590	PIGNIOLO, ANDREW and CAROL SERR	2018	CULTURAL RESOURCES MONITORING REPORT FOR THE SAN LUIS REY MISSION ACADEMY, 4070 MISSION AVENUE, CABLE INSTALLATION PROJECT, CITY OF OCEANSIDE, CALIFORNIA	37-005422

Table 2: Cultural Resources within One Mile of the Proposed Project

Primary Site #	Site Description	Recorder	Relation to Proposed Project
P-37-000241	Mission San Luis Rey	M. Courtney (2017), "ABE" (1952), D. Dominici (1989),	Approx. 0.8 mile southwest across San Luis Rey River
P-37-001272	Slight shell scatter, flaked and ground stone artifacts, fire-cracked rock	D. Dominici (1989)	Approx. 0.8 mile east-southeast across San Luis Rey River
P-37-001273	Groundstone, potsherd	T. Kearns (1971)	Approx. 0.7 mile southeast across San Luis Rey River
P-37-001274	Cobble tools, manos, flakes, destroyed	T. Kearns (1971)	Approx. 0.4 mile northeast
P-37-001275	Pestle, scraper plane, flakes, patination, destroyed	T. Kearns (1971)	Approx. 0.4 mile northeast
P-37-001283	Metates, manos, hammerstones, cobble tools, flakes, potsherds, historic, shell, bone, mostly destroyed	T. Kearns (1971)	Approx. 0.5 mile southwest across San Luis Rey River

Table 2: Cultural Resources within One Mile of the Proposed Project (cont.)

P-37-005422	Flaked stone, brownware pottery, shell, cattle bone, fire-affected rock, historic (Chinese ceramics, Majolica, building material, metal, clothing, glass), associated with Mission San Luis Rey	Robbins-Wade, Shultz, Westlund, Wilson, Gilmer (1995), D. Dominici (1989), Greenwood, Bente (1978),	Approx. 0.8 mile south-southwest across San Luis Rey River
P-37-005457	Two felsite flakes, cleared & grazed	R. Norwood (1977)	Approx. 0.7 mile north
P-37-005458	Surface shell scatter, cleared & grazed	R. Norwood (1977)	Approx. 0.8 mile north
P-37-005459	Felsite flake, 20 frags shell, cleared & grazed	R. Norwood (1977)	Approx. 0.9 mile north
P-37-005460	Two felsite flakes, 100 frags. shell, cleared & grazed	R. Norwood (1977)	Approx. 0.9 mile west-northwest
P-37-005461	Light shell scatter, mano fragment, cleared & grazed	R. Norwood (1977)	Approx. 1.0 mile west-northwest
P-37-005462	Isolated battered core tool	R. Norwood (1977)	Approx. 1.0 mile northwest
P-37-005508	Lithic debitage and tools, shell, fire-affected cobbles, disturbed by cultivation & road	D. Dominici (1989), McManus, Corum (1977), T. Kearns (1971)	Approx. 0.9 mile east across San Luis Rey River
P-37-010078	Adobe foundation, well/cistern, associated with Mission San Luis Rey, disturbed by agricultural use and dumping	T. Jacques (1984)	Approx. 0.7 mile southwest across San Luis Rey River
P-37-010079	Adobe brick walls, prickly pear cactus, deteriorated but intact	T. Jacques (1984)	Approx. 0.7 mile southwest across San Luis Rey River
P-37-010080	Shell, hammerstones, flakes, projectile point frag.	T. Jacques (1984)	Approx. 0.7 mile southwest across San Luis Rey River
P-37-011461	Adobe wall section, disturbed by Mission Ave.	D. Dominici (1989)	Approx. 1.0 mile southwest across San Luis Rey River
P-37-011462	Historic cemetery, two TBW sherds	D. Dominici (1989)	Approx. 1.0 mile southwest across San Luis Rey River
P-37-011961	Flaked and ground stone, TBW sherds, historic glass, ceramics, adobe floor/roof tiles, metal	T. Gross, M. Robbins-Wade, L. Jacobson (1990)	Approx. 0.5 mile southwest across San Luis Rey River
P-37-011970	Bedrock milling, flaked & ground stone artifacts, pottery, shell, bone, historic structures, historic artifacts, disturbed by grading, fill, agriculture	Kyle et al. (1990)	Approx. 0.9 mile northwest
P-37-014928	Isolated flake	D. Dominici (1989)	Approx. 1.0 mile south-southwest across San Luis Rey River
P-37-026841	Historic artifact scatter	S. Rosenberg (2005)	Approx. 0.7 mile northeast
P-37-037110	San Luis Rey Wastewater Treatment Plant, NR status 6Z “		Approx 1.0 mile west

III. RESEARCH DESIGN

The archaeological and historical research were designed and executed as an applied research program within the context of the California Environmental Quality Act (CEQA) (21083.2 of the Statutes and 15064.5 of the CEQA Guidelines). The goal was to develop the historic context for the project property and immediate surroundings (identifying the important events, people, architectural trends, and important archaeological data that characterize this context) and to acquire sufficient research and field data to determine if the sites existing on the property meet the criteria for significance under the California Environmental Quality Act (CEQA) or eligibility for the California Register of Historical Resources. This report follows the guidelines established by the *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (OHP 1989).

The Project property is located in proximity to the San Luis Rey River and the Pacific Ocean tidelands and lagoons, natural resource areas that drew Native peoples to the region throughout prehistory. There are numerous prehistoric sites within a one-mile radius of the Project property. Also, less than one mile to the southwest on the south side of the San Luis Rey River is the San Luis Rey Mission, which included a wide sphere of associated settlement that may have extended as far as the Project property. Archaeological research issues of importance are identified in the Prehistoric Cultural Context (Section II.B. above) that would inform assessments of CEQA significance related to discovered prehistoric archaeological resources. There may also be issues of cultural importance to today's Luiseño people, connected to archaeological or cultural resources that may exist on the Project property. These issues will be dealt with through required Tribal Consultation between the City of Oceanside and the Luiseño Tribes.

The period of historic use of the property, which includes the Oceanside area's late nineteenth-century pioneer settlement, early twentieth-century agricultural development, and the rise of mid-twentieth century agri-business, is important in San Diego History. Artifact deposits from rural households, containing information about consumer behavior, household subsistence strategies, health, and other aspects of everyday life, inform historians about the evolution of rural farming family lifeways through these periods of San Diego County history. Archaeological research issues of importance area identified in the Historic Cultural Context (Section II.D. above) that would inform assessments of CEQA significance related to discovered historic archaeological resources.

IV. METHODS

The studies included 1-mile radius record search at the South Coastal Information Center, research of historical archival and published information concerning the project property and occupants during the late nineteenth through mid-to late twentieth centuries at the Oceanside Historical Society and the San Diego History Center, research of historic aerial photographs and maps at San Diego County Cartographic Services Department, research on-line and interviews regarding the Kawano and Nagata families history and development of the property, survey with Luiseño monitor of the project property, surface evaluation of the six discovered historical archaeological sites and isolates, documentation of the Frank Kawano, Harry Nagata, and Yatsu Nagata residences, completion of a DPR 523 Historical Resources Forms (Attachment 2), and preparation of this report. Field notes, research materials, and maps associated with this investigation are currently on file at Heritage Resources, P.O. Box 8, Ramona, California, 92065.

A. Archival Research

Record searches were completed at the San Diego State University-South Coastal Information Center. Other research materials included: historic maps and aerial photographs on file at the San Diego History Center, County of San Diego Cartographic Services, and Oceanside Historical Society; and additional primary and secondary sources in the authors' research library and available through the internet. Family members, Jay Kawano and Neil Nagata were also consulted.

B. Field Methods

The field survey was completed February 7, 2019 by Heritage Resources archaeologist, Sue Wade, and Saving Sacred Sites Native monitor, Banning Taylor. As a result of the survey, all accessible areas of the property were surveyed using transects of approximately 15-20-meter intervals. Much of the property land surface is covered by structures, is paved parking or work areas, or covered by remains of former structures. Portions of the property have been severely disturbed by structure demolition/cleanup after the 2013 fire. Soils in the agricultural fields were silty alluvium, some of which appeared to have been imported to augment the fields. Some of the survey was hampered by very wet fields after several days of rain.

The eastern parcel, the Kawano property, was surveyed in north/south transects spaced approximately 15-meters apart. On the Kawano property, only a highly-disturbed area in the east-central portion and an agricultural field in the west portion is not built upon or paved. The surveyors started at the northeast corner, walked south across paved areas and concrete slabs of former structures and loading docks, then back north to warehouse, mechanics pit and wood-frame house (Frank Kawano residence). Then north-south transects were employed to survey the organic vegetable field on the west portion. This field has been modified by addition of fill soil and decades of cultivation.

The Nagata property contains some areas of pavement and structures but is primarily agricultural fields. The surveyors started at the east-central area of the parcel and walked the planted field rows in north-south transects. The southern portion of the eastern field was so wet that some of the rows could not be walked. On the western portion of the parcel, structure remains were found including foundation remnants, building rubble, landscape remains, and graded piles of rubble and soil. This area is apparently the former location of the George Nagata residence and a warehouse that burned in 2013. At the north edge of this area, is a stucco house (the Harry Nagata residence). The paved area at the northwest was walked and the survey was completed by walking north-south transects across the agricultural field in the northeast portion of the property north of the 1960s house (the Yatsu Nagata residence).

Sue Wade returned to the property on February 9 to document the three residences (the Frank Kawano, Harry Nagata, and Yatsu Nagata residences) discovered on the property during the survey. Exterior photographs were taken, architectural attributes of the structures were documented, and any associated landscape features were noted.

V. RESULTS

A. FIELD SURVEY

The Project property is completely developed with three residences, agricultural structures, paved parking lots, and agricultural fields. While warehouses were constructed during the first decades after the property was purchased by the Kawano and Nagata families, examination of the historic and current aerial photographs confirms that any earlier warehouses have been replaced by more recent industrial structures. Remains of past structures, in the form of disrupted concrete foundation remnants and other building debris, are scattered across the two parcels, with two concentrations at the east-central portion of the Kawano property and at the west central portion of the Nagata property. The Nagata property debris location is the former site of the George Nagata residence that was destroyed and a warehouse that burned. Both areas have been seriously disrupted by site clean-up and debris removal, such that no intact features remain. The current situation is that only three residences exist on the Project property that exceed 50 years in age.

As a result of the February 7 field survey, 3 isolated prehistoric artifacts and the 3 historic residences were recorded. All are documented on appropriate DPR523 Resource Record Forms (Confidential Attachment 1).

P-37-038466 was discovered at the base of a warehouse structure on the eastern portion of the Kawano parcel. The isolated occurrence consists of a brownware pottery rim sherd fragment and a fragment of *donax* sp. shell located in the dripline of a warehouse and an adjacent erosional rill amidst gravel and broken glass debris. No additional prehistoric cultural material was found.

P-37-038467 was discovered in center east of the southern agricultural field on the Nagata property. The isolated occurrence consists of a brownware pottery sherd fragment located in a disturbed context. No additional prehistoric cultural material was found.

P-37-038468 was located on graded mound of dirt in burned debris field at center of western portion of the Nagata property. The isolated occurrence consists of a bifacial granitic mano located in a disturbed context. No additional prehistoric cultural material was found.

P-37-038464 consists of the Frank Kawano residence. Based on the title records and aerial photographs, the Kawano residence was constructed sometime between 1948 and 1953. The structure is a single-story residence of wood-frame construction set on concrete piers. The exterior is horizontal ship-lap siding. The roof is asphalt paper cover with open eaves and board facia. The cross-gable floor and roof plan exhibit a central front gable elevation facing east and 2 symmetrical side gable ends that protrude approximately 18" in front of the center. The front/east elevation exhibits an entry door with simple wood surround and triangular pediment and two symmetrical windows, all off-set to the left of center. There is one single-light double-hung window to the left, which is the only opening not boarded up. The north elevation contains a side entrance door with simple wooden rain-cover and adjacent window. The side gable has a wood louvered vent. A rectangular gable-roof building addition is inset into the northwest cross of the building plan. The west elevation contains additional door and window and a deteriorated wood rear-porch overhang. The south elevation is nearly flush with a more recent mechanic's shed. Remaining ornamental landscape includes two 10-15-foot-tall joshua trees and two 40+-foot-tall cedar trees that frame the eastern entrance, citrus trees to the northwest, and a hedge along the south. A crop field extends, on the other side of a fence, from the back porch to the west. The house is vacant, deteriorating from dis-use, and surrounded by the So Cal Ag Properties asphalt pavement, warehouses, and other industrial facilities. The house is a simple vernacular structure of no outstanding architectural significance and its context is compromised by surrounding modern industrial buildings, infrastructure, and modern residential development.

The Kawano Property was vacant land, likely pasture for the Libby family dairy farm (1928 and 1938 aerial photographs) that included the Kawano Property before its purchase by Frank Y. Kawano in September 1947. By 1953 (1953 aerial photograph), the Kawanos had constructed structures on the eastern property boundary, a residence (the Frank Kawano Residence) and associated structures on the west-central portion of the property, and three rectangular warehouses in the center of the property. The western approximately one-third of the property was in agriculture. The Frank Kawano Residence, the warehouses added in 1979, and the western agricultural field are the basic property configuration that remains today. The structures along the eastern property boundary were removed by 1989. The only remaining structure on the Kawano parcel, of greater than 50 years in age (construction dating between 1948 and 1953), is the Frank Kawano Residence.

P-37-038465 consists of the Harry Nagata residence. Based on the title and official records and aerial photographs, the Harry Nagata residence was constructed sometime between 1947 and 1953. The house is now vacant. The building is a single-story residence of probable wood-frame construction set on concrete pier foundation. The exterior cladding is currently stucco but that appears to be a re-treatment. The roof is asphalt paper with open eaves and board facia that is mostly fallen off. The small house is a front-facing "L"-shape floor plan. The roof is low-pitch hipped with a segment cut out over the bend in the L to accommodate the front entrance. The front elevation contains the front door and extended-roof-line covered porch, with a linear rectangular picture window to the right. Wood-frame double-hung windows are evenly spaced on the remaining three sides of the house. There is a single-wall vertical-board building addition to the rear on a concrete perimeter foundation. The addition exhibits aluminum frame slide windows and a rear door with no porch. There is little remaining landscaping: two olive trees, some citrus, and a few ornamentals. There is a warehouse to the north, graded pad to the west, and the debris from the destroyed George Nagata house and burned warehouse to the south. The Harry Nagata residence is in poor condition. The residence is a simple vernacular structure of no architectural distinction.

The Nagata Property was vacant land, likely pasture for the Libby family dairy farm (1928 and 1938 aerial photographs), which included the Nagata Property before its purchase by George T. Nagata in September 1947. By 1953, the Nagata brothers (George Takamasa Nagata, Harry Hisashi Nagata, and Mitsura Nagata) had constructed 2 residences (one for the George Nagata family, now destroyed, and one for the Harry Nagata family, still in existence) and a packing shed on the west central portion of the property. The remainder of the property was in agriculture (aerial photographs 1953). Neil Nagata states that Harry Nagata lived on the property until 1972 and that the George Nagata family moved from the property in 1983 (their house was subsequently destroyed). On 9/25/2013, a fire destroyed the 1960s warehouse and any structures that may also have remained in this west-central area. The Harry Nagata residence is one of two remaining structures on the Nagata property of greater than 50 years in age (construction dating 1947-1953).

P-37-038469 consists of the Yatsu Nagata residence. Based on the title and official records, aerial photographs, and Neil Nagata personal communication, the Yatsu Nagata residence was constructed sometime between 1953 and 1967, most likely in the 1960s. The structure is a single-story residence of wood-frame construction set on a poured concrete foundation. The exterior cladding is partially vertical board (likely a decorative siding treatment in the cross gable front elevation) and partially stucco. The roof is asphalt rolled roofing with open eaves and board facia. The cross-gable floor and roof plan consist of one long gabled rectangle, with a protruding cross gable that forms part of the front elevation. The cross-gable component has an extended roofline that forms a porch over the centrally-located entry door with brick fireplace on the left. The cross gable also contains an aluminum-frame “picture window” with side lights. To the right of the entry are three sliding aluminum-frame strip windows and to the left of the cross gable is a garage that has been converted into a room. A corrugated aluminum shed-roof car port is attached to the east wall. The aluminum-frame sliding windows continue in a strip around the remaining three sides of the house. Remaining ornamental landscape includes palms, joshua trees, pines, mostly dead native trees, and unkempt shrubbery. Crop fields extend to the south, west, and north. Calle Joven is to the east. The house is occupied, but is in poor repair and is deteriorating from age. The residence is typical of Contemporary style of American houses built after World War II, particularly in subdivision tracts and is of no architectural significance.

The Nagata Property was vacant land, likely pasture for the Libby family dairy farm (1928 and 1938 aerial photographs) that included the Nagata Property before its purchase by George T. Nagata in September 1947. Between 1953 and the 1960s, the property supported two family residences, agricultural warehouses, and agricultural fields (aerial photographs 1953). By 1967, a third house (the Yatsu Nagata residence) was built at the east central boundary of the property and a Notice of Completion was filed in 1961 for the driveway along the eastern boundary of the Nagata Bros. property to the 1960s house (aerial photographs 1967, Notice of Completion, Recorders File No. 156814, 9/8/1961). Neil Nagata, son of

George Nagata, states that this residence was built for his grandmother Yatsu Nagata. Neil Nagata states that the George Nagata family moved from the property in 1983 (their house was subsequently destroyed). On 9/25/2013, a fire destroyed the 1960s warehouse and any structures that may also have remained in this area. The Yatsu Nagata residence is one of two remaining structures on the Nagata property of greater than 50 years in age (construction dating to the 1960s).

VI. MANAGEMENT CONSIDERATIONS

Archaeological research, field survey, resource documentation and recordation of DPR 523 Resource Record Forms were completed for the North River Road Planned Block Development Overlay District Project property (composed of the Kawano and Nagata parcels). This work was completed in compliance with Environmental statutes, regulations, and planning documents of the City of Oceanside and the State of California.

- The City of Oceanside General Plan Environmental Resource Management Element recommends to:

  Encourage the conservation and protection of significant cultural resources for future scientific, historic, and educational purposes (1975/2002: p. 8).

- The California Public Resources Code, Division 13. Environmental Quality, Chapter 2.6, 21083.2 requires that:

  As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources.

  g) As used in this section, “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

  (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

  (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

  (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

  (h) As used in this section, “nonunique archaeological resource” means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

- California Code of Regulations (CCR) Title 14, Chapter 3, 15064.5.

  Determining the Significance of Impacts to Archeological and Historical Resources

  (a) For purposes of this section, the term "historical resources" shall include the following:

  (1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.).

  (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the

requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section4852) including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j)or 5024.1.

Surface observations were sufficient for the isolated archaeological artifacts (P-37-038466, P-37-038467, and P-37-038468), to conclude that, due to their situation as isolates in a disturbed context, they lack sufficient data potential and integrity to address important research questions per CCR 15064.5 (a) (3) (D). For the three historic residences (P-37-038464/the Frank Kawano residence, P-37-038465/the Harry Nagata residence, and P-37-038469/the Yatsu Nagata residence), research in the form of review of the parcels' Chain of Title, review of records at the Oceanside Historical Society and San Diego History Center, review of documents "on-line," interviews with the property owners, and in-field architectural documentation provided sufficient information to address the criteria for eligibility for the California Register of Historical Resources (CCR 15064.5 (a) (3) (A), (B), and (C). As documented in the historic research, the three residences were built as family residences for the Kawano and Nagata families, and while successful agricultural families in Oceanside in the latter half of the 20th century, their residences are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage nor are they associated with the lives of persons important in our past. The structural documentation completed during the field survey confirms that the three residences are vernacular structures and do not embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. And finally, as structures, they have not yielded, or may be likely to yield, information important in prehistory or history.

In summary, historical research, field survey and archaeological and structural resource documentation and assessment, resource recordation, and preparation of this technical report were completed for the North River Road Planned Block

Development Overlay District Project property (composed of the Kawano and Nagata parcels). As a result of these studies, it is concluded that none of the cultural resources found on the property meet the criteria for eligibility for the California Register of Historical Resources per CCR 15064.5 (a) (3) (A), (B), (C), and (D). The studies were also sufficient to determine that the no cultural resources were found on the property that qualify as a "unique archaeological resource" and that the proposed Project will not have a significant effect on archaeological resources per PRC 21083.2. The studies were also sufficient to conclude that the proposed Project will not contradict the City of Oceanside General Plan Environmental Resource Management Element recommendation to encourage the protection of significant cultural resources for future scientific, historic, and educational purposes (1975/2002: p.8). No further measures related to cultural resources on the North River Road Planned Block Development Overlay District Project property are recommended prior to ground-disturbing activities in relation to Project demolition or grading. Because the property is located on an alluvial terrace associated with the San Luis Rey River and because three isolated prehistoric artifact/ecofact occurrences were discovered during the field survey, it is possible that buried archaeological resources could be encountered during excavations. Therefore, it is recommended that an archaeological monitoring program be implemented at the time of Project development. Development of the monitoring program should take place in consultation with the Luiseño Bands.

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CONFIDENTIAL ATTACHMENT:

1: DPR 523 Resource Record Forms

Archaeological and Historical DPR 523 Resource Record Forms are Confidential and on file with the South Coastal Information Center

APPENDIX J
GEOTECHNICAL INVESTIGATION – EASTERN PARCEL

Geotechnical Investigation

Proposed Multi-Family Residential Project
4665 North River Road
Oceanside, California

(A.P.N. 157-060-40)

January 18, 2016

Prepared For:
So Cal Ag Properties, Inc.
Mr. Jay Kwano
P.O. Box 4601
Oceanside, California 92052

Prepared By:
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2450 Auto Park Way
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Job #15-188-P

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January 18, 2016

So Cal Ag Properties, Inc.
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GEOTECHNICAL INVESTIGATION, PROPOSED MULTI-FAMILY RESIDENTIAL PROJECT, 4665 NORTH RIVER ROAD, OCEANSIDE, CALIFORNIA (A.P.N. 157-060-40)

Pursuant to your request, Vinje & Middleton Engineering, Inc. has completed the attached Update Geotechnical Investigation Report for the proposed family apartment housing project at the above-referenced site.

The following report summarizes the results of our research and review of previous pertinent geotechnical reports, maps and records, current field observations, field explorations, laboratory testing, and engineering analyses. Conclusions and recommendations based on this study and consistent with site geotechnical conditions are provided for the proposed future development, as understood. From a geotechnical engineering standpoint, it is our opinion that the site is generally suitable for the planned multi-family residential development provided the recommendations presented in this report are incorporated into the design and construction of the project.

The conclusions and recommendations provided in this study are consistent with the site geotechnical conditions and are intended to aid in preparation of final development plans and allow more accurate estimates of development costs.

If you have any questions or need clarification, please do not hesitate to contact this office. Reference to our **Job #15-188-P** will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

VINJE & MIDDLETON ENGINEERING, INC.

REGISTERED PROFESSIONAL ENGINEER
RALPH MALCOLM VINJE
No. 863
Exp. 12-31-17
GEOTECHNICAL
CALIFORNIA

Ralph M. Vinje
GE #863

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GEOTECHNICAL INVESTIGATION
PROPOSED MULTI-FAMILY RESIDENTIAL PROJECT
4665 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA
(A.P.N. 157-060-40)

I. INTRODUCTION

The property investigated herein includes a commercial packing plant development, a private residence and a vacant lot at the referenced location in the city of Oceanside. The site location is shown on a Vicinity Map attached to this report as Plate 1. Approximate site coordinates are 33.2445°N latitude and -117.3106°W longitude. We understand that the property is planned for redevelopment into a future condominium development.

Consequently, this investigation was initiated to determine soil and geotechnical conditions at the property and to ascertain their influence upon the proposed future development. Test pit digging, test borings, soil sampling and laboratory testing were conducted in support of this effort which has resulted in the remedial grading, bearing soil preparation and development recommendations provided in following sections.

II. SITE DESCRIPTION

A Geotechnical Map, reproduced from an As-Built survey map by Dask Land Survey (dated August 26, 2009), shows existing site conditions and is included as Plate 2. The project site is nearly a square-shaped property bordered by North River Road and Calle Joven to the north and south respectively, a commercial entity lies to the east, and a vacant lot to the west. Eastern portions of the property are presently occupied by a large, multi-story packing plant with nearby associated structures and improvements. Surface areas associated with the packing plant range from paved to dirt and are utilized for parking and storage. An older, single-family residential structure occupies the central portion of the property. The west portion of the property is characterized largely by natural dirt-covered surfaces that were previously used for agricultural purposes. The San Luis Rey River lies to the south in relatively close proximity to the site.

Level to gentle topography characterize much of the project site. Minor graded slopes are associated with a small elevated area east of the packing plant structures. Graded slopes are also present ascending to adjacent roadways along the west and south site margins. All graded slopes are constructed at gradients approaching 2:1 maximum and generally approach 5 feet high maximum.

Access to the site is provided by paved entries/exits that connect to North River Road to the north and Calle Joven to the south.

Site drainage within the developed portion of the site (central and east portions) is generally developed to flow away from structures and improvements to storm drains and then offsite. Drainage in the west portion of the property generally sheetdrains in a southerly direction to a dirt swale which drains into a storm drain in the southwest corner of the site. Excessive scouring or erosion is not in evidence.

III. PROPOSED DEVELOPMENT

Development plans are not yet available. However, we understand that existing structures and improvements will be removed to make room for a condominium development with associated interior roads, surface and subsurface improvements.

Minor grade alterations (less than 10 feet) are expected for the creation of level building pad surfaces. The construction of new large graded embankments are not anticipated in connection with the future site development.

Detailed foundation plans are also not yet available. However, planned condominium buildings are anticipated to consist of masonry or wood-frame structures with exterior stucco supported on shallow stiff foundations with stem walls and slab-on-grade floors, or slab-on-ground with turn-down footings.

IV. SITE INVESTIGATION

Subsurface conditions at the property were determined by the excavation of 5 test pits dug with a track-mounted 310 caterpillar excavator and 2 test borings drilled with a truck-mounted rotary drill rig. All the exploratory excavations were logged by our project geologist who also directed in-situ sampling at selected depths and locations for subsequent laboratory testing. The borings were permitted (Permit #LMWP 001990), per the County of San Diego DEH requirements. Logs of the excavations are included as Plates 3-11. Laboratory test results and engineering properties of tested samples are summarized in following sections.

V. GEOTECHNICAL CONDITIONS

The northeast / east portions of the project property are underlain by Pleistocene age Terrace Deposits. Elsewhere, the study areas are underlain by alluvium deposits to the depths explored. Geologic Cross-Sections depicting subsurface conditions based on Plate 2 of our test excavations is attached as Plate 12.

A. Earth Materials

Terrace Deposit: The northeast and east portions of the study property are underlain at shallow depths by Pleistocene age Terrace Deposits. The Terrace Deposits, as exposed in our test pits, consist of red brown-colored sandstone that was found in cemented and dense conditions overall. Project Terrace Deposits are considered stable, competent rocks that will provide adequate support for future fills, structures, and improvements.

Alluvium: Younger alluvium deposits, associated with the nearby San Luis Rey River, occur in the central and western areas of the property, outside the Terrace Deposits. Project alluvium are typically silty fine to medium grained sandy deposits. Site alluvium generally occur in a loose condition near the surface and becomes more uniformly firm to locally dense at depth. Local areas of cohesionless "running sand" were exposed within our test pits. Based on our test borings, site alluvium is known to extend more than 50 feet beneath much of the alluvial portion of the property.

B. Groundwater and Surface Drainage

Groundwater was encountered in our deep boring at a depth of 26 feet to 27 feet below the ground surface. Indicated groundwater levels are expected to fluctuate depending upon seasonal rainfall conditions and annual storm events influencing flow levels within the nearby San Louis Rey River. Accurate historic high groundwater levels at the project property are also unknown. However, a very significant raise is generally not considered likely. Therefore, groundwater levels, as recorded during this study, are not expected to impact grading and construction work or directly impact future buildings and improvements. Project excavations may encounter some subsurface groundwater or local seeps depending on the seasonal conditions requiring appropriate dewatering efforts suitable to the site conditions. Ground stabilization technique and remedial grading recommendations outlined in the following sections are provided considering potential effects of possible groundwater intrusions and saturated ground conditions.

As with all developed properties, the proper control of flood waters and site surface drainage is a critical component to overall stability of the graded building pads. Surface water should not pond upon graded surfaces, and irrigation water should not be excessive. Over-watering of site vegetation may also create perched water and the creation of excessively moist areas at finished lot surfaces.

C. Faults/Seismicity

Faults or significant shear zones are not indicated on or near proximity to the project site. As with most areas of California, the San Diego region lies within a seismically active zone; however, coastal areas of the county are characterized by low levels of seismic activity relative to inland areas to the east. During a 40-year period (1934-1974), 37 earthquakes were recorded in San Diego coastal areas by the California Institute of Technology. None of the recorded events exceeded a Richter magnitude of 3.7, nor did any of the earthquakes generate more than modest ground shaking or significant damages. Most of the recorded events occurred along various offshore faults which characteristically generate modest earthquakes.

Historically, the most significant earthquake events which affect local areas originate along well known, distant fault zones to the east and the Coronado Bank Fault to the west. Based upon available seismic data, compiled from California Earthquake Catalogs, the most significant historical event in the area of the study site occurred in 1800 at an estimated distance of 17 miles from the project area. This event, which is thought to have occurred along an offshore fault, reached an estimated magnitude of 6.5 with estimated bedrock acceleration values of 0.136g at the project site. The following list represents the most significant faults which commonly impact the region. Estimated ground acceleration data compiled from Digitized California Faults (Computer Program EQ Fault Version 3.00 updated) typically associated with the fault is also tabulated.

TABLE 1

FAULT ZONE	DISTANCE FROM SITE	MAXIMUM PROBABLE ACCELERATION (R.H.)
Newport-Inglewood Fault	9.2 miles	0.169g
Rose Canyon Fault	10.3 miles	0.156g
Elsinore-Julian Fault	19.5 miles	0.167g
Coronado Bank Fault	26.3 miles	0.156g

The location of significant faults and earthquake events relative to the study site are depicted on a Fault - Epicenter Map attached to this report as Plate 13.

More recently, the number of seismic events which affect the region appears to have heightened somewhat. Nearly 40 earthquakes of magnitude 3.5 or higher have been recorded in coastal regions between January 1984 and August 1986. Most of the earthquakes are thought to have been generated along offshore faults. For the most part, the recorded events remain moderate shocks which typically resulted in low levels of ground shaking to local areas. A notable exception to this pattern was recorded on July 13, 1986. An earthquake of magnitude 5.3 shook County coastal areas with moderate to locally heavy ground shaking resulting in $700,000 in damages, one death, and injuries to 30 people. The quake occurred along an offshore fault located nearly 30 miles southwest of Oceanside.

A series of notable events shook County areas with a (maximum) magnitude 7.4 shock in the early morning of June 28, 1992. These quakes originated along related segments of the San Andreas Fault approximately 90 miles to the north. Locally high levels of ground shaking over an extended period of time resulted; however, significant damages to local structures were not reported. The increase in earthquake frequency in the region remains a subject of speculation among geologists; however, based upon empirical information and the recorded seismic history of County areas, the 1986 and 1992 events are thought to represent the highest levels of ground shaking which can be expected at the study site as a result of seismic activity.

In recent years, the Rose Canyon Fault has received added attention from geologists. The fault is a significant structural feature in metropolitan San Diego which includes a series of parallel breaks trending southward from La Jolla Cove through San Diego Bay toward the Mexican border. Test trenching along the fault in Rose Canyon indicated that at that location the fault was last active 6,000 to 9,000 years ago. More recent work suggests that segments of the fault are younger having been last active 1000 - 2000 years ago. Consequently, the fault has been classified as active and included within an Alquist-Priolo Special Studies Zone established by the State of California.

Fault zones tabulated in the preceding table are considered most likely to impact the region of the study site during the lifetime of the project. The faults are periodically active and capable of generating moderate to locally high levels of ground shaking at the site. Ground separation as a result of seismic activity is not expected at the property.

D. Seismic Ground Motion Values

Seismic ground motion values were determined as part of this investigation in accordance with Chapter 16, Section 1613 of the 2013 California Building Code (CBC) and ASCE 7-10 Standard using the web-based United States Geological Survey (USGS) ground motion calculator. Generated results including the Mapped (S_s, S_1), Risk-Targeted Maximum Considered Earthquake (MCE_R) adjusted for site Class effects (S_{Ms}, S_{M1}) and Design (S_{Ds}, S_{D1}) Spectral Acceleration Parameters as well as Site Coefficients (F_a, F_v) for short periods (0.20 second) and 1-second period, Site Class, Design and Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrums, Mapped Maximum Considered Geometric Mean (MCE_G) Peak Ground Acceleration adjusted for Site Class effects (PGA_M) and Seismic Design Category based on Risk Category and the severity of the design earthquake ground motion at the site are summarized in the enclosed Appendix.

E. Geologic Hazards

Conditions which could result in potential geologic hazards are known in the areas of San Diego County. In accordance with the Uniform Building Code regulations and local codes and standards, the following geotechnical factors are herein evaluated:

1. **Seismicity -** The most significant geotechnical factor which could impact the project site relates to ground shaking during an earthquake event along an active fault. Moderate to locally heavy levels of ground shaking can be anticipated during rare events over the lifetime of the development. Details of the project's seismic environment are given in a preceding section.

2. **Faulting -** Faults or significant shear zones are not indicated within the project site. The project is not located in proximity to Alquist - Priolo earthquake fault zone areas associated with active faults discussed above.

3. **Flood Inundation Potential -** Flooding hazards at the project site were evaluated by a review of nearby drainage basins, and review of the appropriate Flood Insurance Rate Map, compiled by the Federal Emergency Management Agency (FEMA). The San Luis Rey River is a significant feature that drains a large portion of north San Diego county and is located south of the subject property. According to FEMA Map Panel 756 of 2375 enclosed with this report as Plate 14, the project site is situated within Zone X, designated as "Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1-foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood."

4. **Liquefaction -** Soil liquefaction or related ground failures can adversely impact manmade structures and improvements at sites where subsoils consist of loose alluvial deposits inundated with groundwater. Liquefaction is the collapse of the soil structure in association with an increase in pore pressure during a seismic event. A liquefaction analysis of the underlying alluvial soil was conducted as part of this investigation. Findings and conclusions of the liquefaction analysis are detailed in a following section.

5. **Slope Stability -** No significant slopes are present. Anticipated future graded fill slopes will be grossly stable to design heights provided our grading recommendations are implemented during grading.

6. **Collapsible Soils -** Buildings and improvements founded on loose to very loose and dry sandy deposits may be damaged by soil collapse. Soil collapse is sudden and often large induced settlements when susceptible load bearing deposits become saturated after construction. Collapsible soils are typified by

low values of dry unit weight and natural water content. The amount of settlement depends on the applied vertical stresses and the extent of the wetting and availability of water.

Upper alluvial deposits at the site are in a dry and loose to very loose condition indicating a high potential for collapse. Collapsible soils within the project foundation bearing and subgrade soils should be removed and recompacted as controlled fill as recommended in following sections.

7. **Expansive Soils -** Site soils are predominantly sandy granular non to very low expansive deposits. Potentially expansive soils may locally occur at the site in minor quantities. Site potentially expansive soils, if encountered, should be selectively buried in deeper fills or thoroughly mixed with an abundance of available non expansive soils in order to manufacture a non to very low expansive mixture as recommended below.

8. **Settlements and Ground Subsidence -** Anticipated settlements after removal and recompaction of the upper alluvial soils as specified herein, are expected to be within the allowable tolerances on the order of 1 inch, which is expected to occur below the heaviest loaded footing(s). The magnitude of post construction differential settlements as expressed in terms of angular distortion is not anticipated to exceed ½-inch between similar adjacent structural elements.

   Monitoring of site soils during and after remedial grading of upper alluvial soils by installing settlement plates and settlement monuments are recommended to confirm settlement characteristics of the underlying soils.

F. Field and Laboratory Tests and Test Results

Earth deposits encountered in our exploratory test excavations were closely examined and sampled for laboratory testing. Based upon our test pit & boring excavations, site soils have been grouped into the following soil types:

TABLE 2

Soil Type	Description
1	Grey silty fine to medium sand - Fill (af) / Alluvium (Qal)
2	Red brown fine to medium sand - Fill (af) / Terrace Deposit (Qt)

The following tests were conducted in support of this investigation:

1. **Standard Penetration Test:** Standard penetration tests (SPT) were performed at the time of borehole drilling in accordance with ASTM standard procedure D-1586 using the rope & cathead method. The procedure consisted of a standard 51 MM outside diameter sampler without liner, 457 MM in length and 35 MM in inside diameter driven with a 140-pound hammer, dropped 30-inches using 5-foot long AW drill rods. The bore hole was 200 MM (8 inches) in diameter and mud wash drilling method was used below the water table. The test results are indicated at the corresponding locations on the attached Boring Logs.

2. **Maximum Dry Density and Optimum Moisture Content:** The maximum dry density and optimum moisture content of Soil Types 1 and 2 were determined in accordance with ASTM D-1557. The results are presented in Table 3.

TABLE 3

Location	Soil Type	Maximum Dry Density (γ_m-pcf)	Optimum Moisture Content (ω_{opt}-%)
TP-1 @ 2'	1	127.1	10.0
TP-5 @ 4'	2	135.2	8.7

3. **Moisture-Density Tests (Undisturbed Chunk and Ring Samples):** In-place dry density and moisture content of representative soil deposits beneath the site were determined from relatively undisturbed chunk samples using the water displacement test method, and undisturbed ring samples using the weights and measurements test method. Results are presented in Table 4 and tabulated on the attached Test Trench and Boring Logs.

TABLE 4

Sample Location	Soil Type	Field Moisture Content (ω-%)	Field Dry Density (γ_d-pcf)	Max. Dry Density (γ_m-pcf)	In-Place Relative Compaction	Degree of Saturation S (%)
TP- 1 @ 2'	1	3	104.9	127.1	83	13
TP- 1 @ 4'	1	3	97.5	127.1	77	11
TP-1 @ 6'	1	3	96.6	127.1	76	11
TP-1 @ 8'	1	3	105.2	127.1	83	13
TP-1 @ 10'	1	9	94.1	127.1	74	30
TP-1 @ 12'	1	7	92.8	127.1	73	23

TABLE 4 (continued)

TP-1 @ 14'	1	11	85.5	127.1	67	31
TP-2 @ 3'	1	3	104.8	127.1	82	13
TP-2 @ 6'	1	3	102.6	127.1	81	13
TP-2 @ 10'	1	6	102.5	127.1	81	25
TP-2 @ 14'	1	4	99.7	127.1	78	16
TP-3 @ 2'	1	2	118.8	127.1	94	27
TP-3 @ 5'	1	12	102.9	127.1	81	51
TP-4 @ 2'	2	9	118.2	135.2	87	55
TP-4 @ 4'	1	3	108.7	127.1	86	15
TP-4 @ 6'	1	8	118.0	127.1	93	50
TP-4 @ 11'	1	2	119.3	127.1	94	13
TP-5 @ 2'	1	6	105.6	127.1	83	27
TP-5 @ 4'	2	7	118.7	135.2	88	43
TP-5 @ 6'	2	7	114.0	135.2	84	38
TP-5 @ 8'	2	7	117.2	135.2	87	42
TP-6 @ 2'	2	3	108.8	135.2	81	14
TP-6 @ 4'	2	4	118.4	135.2	88	24
TP-7 @ 5'	1	12	87.7	127.1	69	35
B-1 @ 5'	1	3	101.0	127.1	79	12
B-1 @ 10'	1	3	101.6	127.1	80	12
B-1 @ 15'	1	3	-	127.1	Sample Disturbed	10
B-1 @ 20'	1	7	-	127.1	Sample Disturbed	28

Note 1: Sample may be somewhat disturbed.
Assumptions And relationships:
In-place Relative Compaction = ($\gamma_d \div \gamma_m$) X100
Gs = 2.70
e = (Gs $\gamma_\omega \div \gamma_d$) - 1
S = (ω Gs) $\div$ e

4. **Amount of Material in Soils Finer Than the No. 200 Sieve:** The amount of material in soils finer than No. 200 sieve tests were performed on selected representative samples of soil type 1 in accordance with the ASTM D-1140. Test results are tabulated in Table 5:

TABLE 5

Location	Original Dry Mass (g)	Dry Mass Retained after washing (g)	Percent of Material Finer Than No. 200 Sieve	Predominant Soil Type
B-2 @ 18'	352.4	335.2	5	SM
B-2 @ 48'	394.3	283.3	28	SM

5. **Liquid Limit, Plastic Limit and Plasticity Index:** Liquid limit, plastic limit, and plasticity index tests were performed on a representative sample of Soil Type 1 in accordance with the ASTM D-4318. Test results are tabulated in Table 6.

TABLE 6

Location	Soil Type	Liquid Limit (LL-%)	Plastic Limit (PL-%)	Plasticity Index (PI=LL-PL)
B-2 @	1	23	23	0 (Non-Plastic)

6. **Expansion Index Test:** One expansion index (EI) test was performed on a representative sample of Soil Type 1 in accordance with the ASTM D-4829. The test results are presented in Table 7.

TABLE 7

Sample Location	Soil Type	Molded ω (%)	Degree of Saturation (%)	Final ω (%)	Initial Dry Density (PCF)	Measured EI	EI 50% Saturation
TP-1 @ 2'	1	9.4	50.1	16.4	111.8	0	0

(ω) = moisture content in percent.

$EI_{50} = EI_{meas} - (50 - S_{meas})\,((65 + EI_{meas}) \div (220 - S_{meas}))$

Expansion Index (EI)	Expansion Potential
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
〉130	Very High

7. **Direct Shear Test:** One direct shear test was performed on a representative sample of Soil Type 1. The prepared specimen was soaked overnight, loaded with normal loads of 1, 2, and 4 kips per square foot respectively, and sheared to failure in an undrained condition. The test result is presented in Table 8.

TABLE 8

Sample Location	Soil Type	Sample Condition	Wet Density (Yw-pcf)	Angle of Int. Fric. (Φ-Deg.)	Apparent Cohesion (c-psf)
TP-1 @ 2'	1	Remolded to 90% of YM @ % ωopt	125	31	0

8. **pH and Resistivity Test:** pH and resistivity of a representative sample of Soil Type 2 was determined using "Method for Estimating the Service Life of Steel Culverts," in accordance with the California Test Method (CTM) 643. The test result is tabulated in Table 9.

TABLE 9

Sample Location	Soil Type	Minimum Resistivity (OHM-CM)	pH
TP-4 @ 2'	2	2148	7.9

9. **Sulfate Test:** A sulfate test was performed on a representative sample of Soil Type 2 in accordance with the California Test Method (CTM) 417. The test result is presented in Table 10.

TABLE 10

Sample Location	Soil Type	Amount of Water Soluble Sulfate In Soil (% by Weight)
TP-4 @ 2'	2	0.006

10. **Chloride Test:** A chloride test was performed on a representative sample of Soil Type 2 in accordance with the California Test Method (CTM) 422. The test result is presented in Table 11.

TABLE 11

Sample Location	Soil Type	Amount of Water Soluble Chloride In Soil (% by Weight)
TP-4 @ 2'	2	0.003

VI. SITE CORROSION ASSESSMENT

A site is considered to be corrosive to foundation elements, walls and drainage structures if one or more of the following conditions exist:

* Sulfate concentration is greater than or equal to 2000 ppm (0.2% by weight).
* Chloride concentration is greater than or equal to 500 ppm (0.05 % by weight).
* pH is less than 5.5.

For structural elements, the minimum resistivity of soil (or water) indicates the relative quantity of soluble salts present in the soil (or water). In general, a minimum resistivity value for soil (or water) less than 1000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion. Appropriate corrosion mitigation measures for corrosive conditions should be selected depending on the service environment, amount of aggressive ion salts (chloride or sulfate), pH levels and the desired service life of the structure.

Results of limited laboratory testing performed on selected representative site samples indicate that the minimum resistivity is greater than 1000 ohm-cm suggesting presence of low quantities of soluble salts. Test results further indicated pH levels are greater than 5.5, sulfate concentrations are less than 2000 ppm, and chloride concentration levels are less than 500 ppm. Based on the results of the corrosion analyses, the project site is considered non-corrosive. The project site is not located within 1000 feet of salt or brackish water.

Based upon the result of the tested soil sample, the amount of water soluble sulfate (SO_4) was found to be 0.006 percent by weight which is considered negligible according to ACI 318, Table 4.3.1. Portland cement Type II may be used. Table 12 is appropriate based on the pH-Resistivity test result:

TABLE 12

Design Soil Type	Gage	18	16	14	12	10	8
1	Years to Perforation of Steel Culverts	34	44	54	74	95	115

VII. HYDRO MODIFICATIONS

Specific hydro modification designs for the project development are not currently available. The following are appropriate for the design and construction of sand filtration trenches, vegetated swales, buffers or strips and sedimentation ponds from a geotechnical engineering point of view.

- Water should not be allowed to penetrate and saturate structural fills, graded or natural slopes, bearing and subgrade soils and wall backfills. Consequently, filtration trenches, sedimentation ponds, and vegetated swales may not be suitable on fill sites, wall backfill zones and areas of problematic soils such as expansive/compressible (collapsible) soils, unless otherwise designed for and approved.

- Groundwater separation should be at least 10 feet from the trench invert to the measured (or historic high, whichever is higher) groundwater elevation, unless otherwise approved.

- Locations away from the buildings, embankments, pavements, walls, structures and improvements greater than 10 feet will be required unless otherwise approved. Closer systems may be permitted if specifically designed and protective structures and moisture protection measures are provided. Set back from wells greater than 100 feet should also be considered unless otherwise permitted.

VIII. LIQUEFACTION EVALUATION AND ANALYSIS

Liquefaction Potential: Soil liquefaction or related ground failures can adversely impact manmade structures and improvements at the sites where subsoils consist of loose sandy deposits inundated with groundwater. Liquefaction is the sudden loss of soil strength in response to ground shaking during an earthquake event. At the study site, the subsoil profile consist of ancient alluvial (Qal) deposits that are chiefly medium dense to dense deposits with satisfactory to relatively high SPT (uncorrected N) values (see attached Boring Logs). Dense alluvial deposits are generally less susceptible to liquefaction.

Static groundwater level was also established at the depth of 26 feet below the existing ground levels (BGS) and may be expected to fluctuate. In the absence of accurate records, the historic high groundwater (HHW) is assumed at the depth of 12 feet BGS for the purpose of our analysis.

In order to more accurately establish liquefaction potential at the project site, one of the exploratory borings (Boring B-2) was advanced to the depth of 52.5 feet (BGS) with frequent in-situ testing (SPT) as the drilling progressed. Analysis were subsequently performed on the collected subsoil data in order to assess liquefaction potential. For this purpose, field SPT values were first corrected and normalized to determine $N1_{60}$ values, as presented in the following table.

D (ft)	Nm	% (#200	Unit Wt. (Pcf)	∂'0 (tsf)	C_N	C_E	C_B	C_R	C_S	Silt Corr.	$N1_{60}$	Liq'n Poten'l
3	11		104	0.156	2.0	1.0	1.15	0.75	1.2	1.0	23	No**
6	11		104	0.312	1.83	1.0	1.15	0.75	1.2	1.0	21	No**
9	12		104	0.468	1.49	1.0	1.15	0.75	1.2	1.0	18	No**
12	20		104	0.624	1.29	1.0	1.15	0.85	1.2	1.0	30	No**
15	21		42*	0.687	1.23	1.0	1.15	0.85	1.2	1.0	30	No
18	24	5	42*	0.750	1.18	1.0	1.15	0.85	1.2	1.0	33	No
21	24		42*	0.813	1.13	1.0	1.15	0.95	1.2	1.0	35	No
24	22		42*	0.876	1.09	1.0	1.15	0.95	1.2	1.0	31	No
27	19		42*	0.939	1.05	1.0	1.15	0.95	1.2	1.0	26	Marginal
30	17		42*	1.000	1.02	1.0	1.15	0.95	1.2	1.0	23	Marginal
33	25		42*	1.065	0.99	1.0	1.15	1.0	1.2	1.0	34	No
36	33		42*	1.128	0.96	1.0	1.15	1.0	1.2	1.0	44	No
39	32		42*	1.191	0.94	1.0	1.15	1.0	1.2	1.0	42	No
42	20		42*	1.254	0.91	1.0	1.15	1.0	1.2	1.0	25	Marginal
45	24		42*	1.317	0.89	1.0	1.15	1.0	1.2	1.0	29	Marginal
48	27	28	42*	1.380	0.87	1.0	1.15	1.0	1.2	1.0	32	No
51	20		42*	1.443	0.85	1.0	1.15	1.0	1.2	1.0	33	No
* Buoyant Unit Weight. ** Above Groundwater.						Cat-head	8"-Dia.		No Liner	Avg. $N1_{60}$ = 30		

Typically, $N1_{60}$ of 30 or greater indicate the subsoil strata below groundwater table is not liquefiable. $N1_{60}$ of 30 between 15 and 30 indicate a marginal liquefaction potential. Liquefaction potential of saturated loose subsoil strata may exist and appropriate mitigation measures typically apply for $N1_{60}$ less than 15.

Further analyses were performed on the underlying subsoil layers considering the $N1_{60}$ values, design earthquake magnitude (M) of 6.5 and peak horizontal acceleration (a_{max}) of 0.437g. Results of our analyses are summarized in the following table:

Depth (ft)	% Clay	LL (%)	PI	MC (%)	0.9LL	Nm	$N1_{60}$	CRR	CSR	Safety Factor (SF)	Comments
3'				4		11	23	0.25	0.187	1.3	Above Water
6'						11	21	0.22	0.187	1.2	Above Water
9'						12	18	0.20	0.185	1.1	Above Water
12'				4		20	30	0.50	0.185	2.7	Non-Liquefiable
15'						21	30	0.50	0.204	2.4	Non-Liquefiable
18'				4		24	33	Inf.	0.226	Inf.	Non-Liquefiable
21'						24	35	Inf.	0.241	Inf.	Non-Liquefiable
24'				28		22	31	0.50	0.253	2.0	Non-Liquefiable
27'				33		19	26	0.30	0.260	1.2	Non-Liquefiable
30'						17	23	0.25	0.268	0.93	Liquefiable
33'				25		25	34	Inf.	0.271	Inf.	Non-Liquefiable
36'						33	44	Inf.	0.273	Inf.	Non-Liquefiable
39'				29		32	42	Inf.	0.277	Inf.	Non-Liquefiable
42'						20	25	0.28	0.276	1.0	Marginal/Liq'ble
45'				30		24	29	0.42	0.275	1.5	Non-Liquefiable
48'				28		27	32	Inf.	0.274	Inf.	Non-Liquefiable
51'		23⟨35	0	24	⟩21	20	23	0.32	0.271	1.2	Non-Liquefiable

Liquefaction Screening: CLAYEY soils may be liquefiable having ALL of the following criterial apply:
i) %clay content (0.005mm) ⟨ 15
ii) L.L. ⟨ 35%
iii) MC ⟩ 0.9L.L.

Assumptions and Explanations: Inf. = Infinite, High Groundwater Table Assumed at 12', a_{max} = 0.437g, MSF = 1.5, % Fines = 5% to 45' & 15% below 45'.

Our analysis, as summarized in the table above, generally indicate satisfactory factor of safety against potential liquefaction within the saturated subsoil layers overall, with the exception of 2 thin layers where liquefiable and marginally liquefiable soils occur at the depths of 30 and 42 feet respectively. A minimum safety factor of 1.1 or greater are considered satisfactory against liquefaction potential.

However, the potentially liquefiable (safety factors less than 1.1) thin layers occur at the depth (30 and 42 feet BGS), sandwiched between "non-liquefiable" layers on the top and bottom, and are approximately 3 feet thick. Consequently, liquefaction potential within these thin layers are not considered to be a major influencing factor on the overall subsoil profile.

Ground stabilization and remedial grading procedures specified herein consisting of 15 feet removal of the upper alluvial soils and recompaction to minimum 95% compaction levels are also provided to further improve foundation soils against liquefaction potential to very low levels of risk. In our opinion, liquefaction will not be a major geotechnical concern in the development of the project property provided our remedial grading and foundations recommendations are followed. The 95% compacted fills within the upper 15 feet will also mitigate soil collapse potential indicated in the upper loose and dry sandy alluvial deposits.

Seismically induced total and differential settlements are accepted to be on the order of 1.25 and 0.75 inches for total and differential settlements respectively, for a rare 7.5 magnitude earthquake event. Smaller seismically induced total and differential settlements, on the order of 1 and 0.5 inches, respectively, may be estimated for more frequent low magnitude seismic events.

IX. CONCLUSIONS

The redevelopment of the project site for multi-family residential purposes is generally feasible from a geotechnical viewpoint. The following conditions are unique to the study property and will most impact its redevelopment from a geotechnical viewpoint:

1. Landslides, faults, or significant shear zones are not present at the site and are not considered a geotechnical factor in the redevelopment of the project property.

2. Collapse of the upper dry, loose alluvial soils during a major seismic event along a nearby active fault is considered the most significant geotechnical concern at the portions of the project property underlain by young alluvial deposits. Consequently, added site specific analysis were performed to more accurately evaluate soil collapse and liquefaction potential to establish appropriate remedial grading ground stabilization techniques suitable for support of future buildings and improvements in these areas.

   Based on our analysis, remedial grading ground stabilization techniques are recommended in the following sections in order to construct a stable bearing soils profile based on the anticipated soil collapse and liquefaction susceptibility at the project alluvial areas.

3. Post construction settlements after removal and recompaction of the upper alluvial soils as specified herein, are anticipated to be within the allowable tolerances on the order of 1 inch, and are expected to occur below the heaviest loaded footings. The magnitude of post construction differential settlements as expressed in terms of angular distortion is not anticipated to exceed ½-inch between similar adjacent structural elements. Monitoring during and after ground stabilization remedial grading is recommended to confirm settlement characteristics of the underlying soils.

4. The project site is relatively flat to a very gently sloping terrain and creation of larger graded slopes is not expected in connection with the proposed future site development. Consequently, slope stability will not be a major geotechnical factor in the development of the project property.

5. Site excavations will chiefly generate silty sand deposits which may be considered for reuse as new compacted fills as approved in the field. Attempts should be made to bury any clay-bearing soils (if encountered) in deeper fills. Higher compaction requirements typically require added processing, mixing, and grading efforts to manufacture suitable fill mixture and achieve the specified compaction levels.

6. Site soils are expected to shrink when compacted as specified herein and import soils may be required to achieve final design grades. Import soil should be good quality sandy (D.G.) deposits conforming to the requirements of this report as specified below.

7. Based on our field observations and available test results, site soils predominantly consist of silty sand (SM) deposits with very low expansion potential based on ASTM D-4829 classification. Actual classification and expansion characteristics of the finished grade soil should be confirmed in the final as-graded compaction report based on proper testing of foundation bearing and subgrade soils.

8. Based on our field explorations, groundwater conditions were recorded at the depths of 26-27 feet below the ground surface. Historic high groundwater (HHG) levels at the project property are unknown.

   Groundwater conditions at the project site are also expected to seasonally fluctuate. However, a significant rise with major impacts on remedial grading efforts of upper soils, as recommended herein, are not expected. Some subsurface groundwater or local seeps may impact site deeper excavations depending on seasonal conditions which may require dewatering efforts suitable to the site conditions. Commencing site excavations and remedial grading operations during dry seasons of the year is recommended.

9. Adequate site surface drainage control is a critical factor in the future stability of the developed property as planned. Drainage and storm water control facilities should be designed and installed for proper collection and disposal of surface runoff. Hydro modifications and stormwater management should be designed and constructed considering the site geotechnical conditions as outlined in this report.

10. Site excavations and proposed constructions should not impact the adjacent properties, structures and improvements. Adequate setbacks shall be maintained and temporary construction slopes developed or supported as specified in the following sections. Added or revised field recommendations, however, may also be necessary and should be given by the project geotechnical consultant for the protection of adjacent properties and should be anticipated.

X. RECOMMENDATIONS

Recommendations given herein are based on economic feasibility and ease of construction. However, other ground stabilization methods and foundation systems are available and may be considered, if desired. Any techniques other than those specified herein, if considered, should be reviewed by the project geotechnical engineer and design consultants to assure conformance with the indicated site geotechnical conditions. Additional or amended recommendations may also be necessary and should be provided at the time of geotechnical plan review phase, as necessary:

A. Grading and Earthworks

Cut-fill and remedial grading techniques may be used in order to achieve final design grades and construct a safe and stable level surface for the support of the planned new structures and improvements. All excavations, grading, earthwork, construction, and bearing soil preparation should be completed in accordance with Chapter 18 (Soils and Foundations) and Appendix "J" (Grading) of the 2013 California Building Code (CBC), the Standard Specifications for Public Works Construction, City of Oceanside Grading Ordinances, the requirements of the governing agencies and following sections, wherever appropriate and as applicable:

1. Underground and Utility Mark-Up

All existing underground waterlines, sewer lines, storm drains, utilities, tanks, structures and improvements at or nearby the project construction site should be thoroughly potholed, identified and marked prior to the initiation of actual ground stabilization work, excavations, remedial grading operations, trenching, and earthwork. Specific geotechnical engineering recommendations may be required based on the actual field locations and invert elevations, backfill conditions and proposed grades in the event of a grading conflict.

Utility lines may need to be temporarily redirected, if necessary, prior to grading and earthwork operations, and reinstalled upon completion of the constructions. Alternatively, permanent relocations may be appropriate as shown on the approved plans.

Abandoned lines, irrigation pipes and conduits should be properly removed, capped or sealed off to prevent any potential for future water infiltrations into the site fills/backfills, foundation bearing and subgrade soils. Voids created by the removals of the abandoned underground pipes, tanks and structures should be properly backfilled with compacted fills in accordance with the requirements of this report. All wells, if present, should be destroyed in conformance with the County of San Diego requirements

2. Site Preparation and Clearing

All existing structures, surface and subsurface improvements, asphalt, concrete, vegetation, trees, roots, stumps, construction debris, and all other unsuitable materials and deleterious matter should be removed from all areas of proposed new fills, improvements and structures as approved in the field.

Construction debris generated from the removals and demolition of the site existing structures, improvements, pavings, and abandoned underground facilities should also be properly removed and disposed of from the site. Trash, vegetation and construction debris shall not be allowed to occur or contaminate new site fills and backfills.

The prepared ground should be inspected and approved by the project geotechnical consultant or his designated field representative prior to grading and earthwork.

3. Remedial Grading and Ground Stabilization - Alluvial Areas

Westerly and southerly areas of the site are underlain by a thick section of alluvial soils which vary in characteristic and in-situ conditions. Alluvial deposits range to more than 50 feet in thickness and generally occur in loose to soft and dry conditions near the surface become more uniformly consolidated with depth.

Special ground stabilization and remedial grading techniques will be required in order to mitigate soil collapse & liquefaction potential and construct safe and stable building pad surfaces as specified below. Actual over-excavation depths should be confirmed and approved by the project geotechnical engineer at the time of remedial grading operations. Deeper over-excavations may be necessary based on the actual field exposures and should be anticipated. Bottom of over-excavations exposing soft and yielding soils which may also require deeper excavations or placement of stabilization geogrid, as directed in the field.

a. **Over-Excavation and Recompaction:** Site existing upper loose to soft alluvial soils underneath all areas planned for new fills, embankments, structures, and improvements, plus a minimum horizontal distance of 10 feet outside the perimeter, where possible and as directed in the field, should be over-excavated to a minimum depth of 15 feet below design rough pad grades, or 15 feet below existing ground surfaces, whichever is more. There should be at least 15 feet of well-compacted fills below design rough pad grades. Should sandstone Terrace Deposits be encountered during removals, refer to Section 4 (Remedial Grading - Terrace Deposits).

   The over-excavated materials should then be properly processed and placed back as compacted fills in accordance with the requirements of this report. New fills should be compacted to minimum 95% of the corresponding maximum dry density (ASTM D-1557), unless otherwise approved.

b. **Stabilization of Bottom of Over-Excavations:** Bottom of all over-excavations should be stabilized by in-place moisture conditioning and recompaction to at least 90% compaction levels (ASTM D-1557) to a minimum depth of 12-inches, prior to fill placement. In the event minimum 90% compaction levels could not be achieved within the soft and yielding bottom exposures as specified herein, a layer of Tensar BX-1200 stabilization geogrid (or approved equal) should be neatly placed at the entire prepared bottom of over-excavations as directed in the field. Initial fill lifts can then be carefully placed over the geogrid and compacted as specified. Additional layers of geogrid may be required at 3-foot increments should yielding conditions continue, as determined by the project geotechnical consultant.

   Field conditions will control actual bottom of over-excavation stabilization procedures. Specific recommendations should be given by the project geotechnical engineer at the time of bottom of over-excavation inspections.

c. **Temporary Construction Slopes:** Top of temporary slopes should maintain adequate set back from existing on and offsite improvements and structures as approved and directed in the field. Undermining and/or damages to existing improvements, structures, underground utilities and within public right-of-way or adjacent easements and properties should be avoided. Face of temporary slopes should be protected from excessive runoff or rainfall and stockpiling the excavated materials near the top of construction embankments should be disallowed. Constructions should also be completed in a timely manner minimizing unsupported slope conditions for prolonged periods of time.

Temporary slopes and trenching excavations development within the site existing alluvial soils above the water table should be laid back at 1:1 gradients maximum unless otherwise directed or approved. Completing excavations in limited sections and considering proper staging and stockpiling areas may also be necessary. The new fills should then be properly benched and tightly keyed into the temporary slope as the backfill placement progresses and as directed in the field by the project geotechnical consultant. Revised temporary construction slope and trenching recommendations including flatter slope gradients, larger setbacks, and the need for temporary shoring/trench shield support may be necessary and should be anticipated. The project contractor shall also obtain appropriate permits, as needed, and conform to the CAL-OSHA and local governing agencies requirements for trenching/open excavations and safety of the workmen during construction.

d. **Dewatering:** Groundwater levels underneath the project site are established well below the specified over-excavation and removal depths. However, some water intrusion or local seeps may develop in the site excavations depending on seasonal conditions. Consequently, minor to local dewatering efforts may be expected. Any dewatering technique which can effectively remove the intruding water and allowing earthworks and constructions to proceed such as gravel-filled trench sumps with submersible pumps may be considered. If dewatering becomes necessary, a qualified contractor should be consulted in this regard. Completing site remedial grading and earthwork during the dry seasons of the year should be considered.

e. **Fill and Backfill Materials, Shrinkage and Import Soils:** Soils generated from the site over-excavations may be reused as new fills provided they are adequately processed and manufactured into a clean uniform mixture free of vegetation, organic matter, trash debris and unsuitable materials as approved in the field. Locally very moist to wet soils may be encountered from the deeper over-excavations requiring additional spreading, drying and processing work.

Site clayey soils, if encountered, should be buried in deeper fills a minimum of 5 feet below finish grades, and more sandy soils available from the onsite over-excavations placed within upper pad grades.

Based upon our analyses and experience with similar earth deposits, site soils may also be expected to shrink approximately 10% to 20% on a volume basis when compacted as specified herein.

f. **Fill and Backfill Processing, Placement, & Compaction:** Uniform and stable fill support should be constructed underneath the site alluvial areas by the ground stabilization, remedial grading, and earthwork operations. For this purpose, site soils should be adequately processed, thoroughly mixed, moisture conditioned to slightly (3% or as directed in the field) above the optimum moisture levels, placed in thin (6 inches maximum) uniform horizontal lifts and mechanically compacted to a minimum of 95% compaction levels per ASTM D-1557.

g. **Instrumentations and Monitoring:** Geotechnical instrumentation devices consisting of settlement plates and settlement monuments should be installed at the project site. The settlement plates should be placed at the bottom of the over-excavations to monitor settlement of the underlying surcharged natural alluvium. The settlement monuments should be installed near the rough finish pad grades to monitor the post grading characteristics of the compacted fill mass. Typical settlement plate and monument schematics are included as Plates 15 and 16 respectively. Geotechnical instrumentation sites should be installed at selected locations not to interfere with the grading and post grading construction phases.

Monitoring should be performed by means of field surveying shots periodically taken at each monitoring site as the fill and backfill placement progresses approximately once every 2 days. At the completion of remedial grading, monitoring should continue for both the settlement plate and settlement monument sites on a bi-weekly and/or monthly basis, per the monitoring schedule developed by the project geotechnical consultant. Surveying shots should be reduced (plotted versus time in days) by the project geotechnical consultant, to establish settlement patterns and soil compression characteristics with respect to surcharge loading pressures, compaction efforts and earthworks activities.

Actual locations for the proposed settlement plates and settlement monuments should be given by the project geotechnical engineer when detailed grading and development plans are available. Geotechnical instrumentations should be installed by or under direct supervision of the project geotechnical consultant and monitoring carried out by surveying methods provided by the project civil engineer or surveyor. Survey records of the instrumentations (vertical and horizontal positioning) should then be given to the project geotechnical consultant for interpretation.

Utility and foundation trenching can only begin after completion of primary soil compression and approval of the project geotechnical consultant (less than 0.01-foot or 0.12 inches between at least three consecutive post-grading readings per the monitoring schedule, unless otherwise noted or required by the project geotechnical consultant). Foundation and slab recommendations provided in the following sections should also be confirmed and / or revised based upon the settlement monitoring data compiled at the completion of monitoring period.

4. **Remedial Grading - Terrace Deposits**

Northeasterly and easterly areas of the site are underlain at shallow depths by competent sandstone Terrace Deposits, mantled by sandy surficial soils.

a. **Removals:** All site existing surficial soils (fill / topsoil) and upper weathered Terrace Deposits in all areas planned for new fills, embankments, structures, and improvements plus a minimum of 10 horizontal feet outside the perimeter, where possible and as directed in the field, should be stripped (removed) to the depth of the underlying dense and competent Terrace Deposits and placed back as properly compacted fills. All existing fills, where encountered, should also be removed extending to the underlying competent bedrock and recompacted as specified herein.

Removal depths will vary. Actual depths should be established by the project geotechnical engineer or his designated field representative in the field at the time of remedial grading operations. Deeper removals and over-excavations may also be required as established in the field and should be anticipated.

b. **Cut - Fill Transitions and Undercuts:** Ground transition from excavated cut to compacted fills should not be permitted underneath future proposed structures and improvements. Building and structural foundations as well as on-grade improvements should be uniformly founded on undisturbed competent Terrace Deposits or supported entirely on compacted fills. Transition pads will require special treatment. The cut portion of the cut-fill pad plus 10 horizontal feet outside the perimeter, where possible and as directed in the field, should be undercut to a sufficient depth to provide for a minimum 4 feet of a compacted fill mat below rough finish grade, or at least 12-inches of compacted fill beneath the deepest footing(s) whichever is more. In the roadways, driveway, parking and on-grade slabs/improvement transition areas there should be a minimum 12-inches of compacted soils below rough finish subgrade.

Undercutting the cut portion of the building pad will also accommodate excavation of foundation trenches and underground utilities into an otherwise harder sandstone deposits. In the case of deeper utility trenches, undercutting to a minimum 6 inches below the proposed inverts should be considered.

c. **Trenching and Temporary Construction Slopes:** Project excavations, trenching, and construction slopes are mostly expected to expose shallow surficial soils atop competent sandstone. Project excavations, trenching, and construction slopes exposing competent sandstone may be developed at near vertical gradients to 5 feet high maximum, unless otherwise specified or directed in the field. Temporary excavation slopes greater than 5 feet developed into site Terrace Deposits may be constructed near vertical gradients within the lower 5 feet and laid back at 1:1 gradients within the upper sections, unless otherwise noted.

Elsewhere, construction slopes and trenches excavated with the site existing surficial soils less than 3 feet in maximum height, may be constructed at near vertical gradients, unless otherwise approved or directed in the field. Trench and construction slopes greater than 3 feet high maximum developed within these deposits may be constructed at near vertical gradients in the lower 3 feet and laid back at 1:1 in the upper portions, as approved in the field. The remaining wedge exposed at the laid back temporary slopes should then be properly benched out and new fills/backfills tightly keyed-in as the backfilling progresses. All temporary construction slopes require geotechnical inspections during the excavation operation.

Specific recommendations should be given in the field by the project geotechnical consultant based on actual exposures. Revised temporary construction slope and trenching recommendations including flatter slope gradients, larger setbacks and the need for temporary shoring/trench shield support may be necessary and should be anticipated. The project contractor shall also obtain appropriate permits, as needed, and conform to Cal-OSHA and local governing agencies' requirements for trenching/open excavations and safety of the workmen during construction.

d. **Fill-Backfill Materials and Compaction:** Soils generated from excavations of site surficial soils and weathered Terrace Deposits, will predominantly consist of good quality sandy material which will work well as new site fills. Excavations may also locally encounter some clayey soils which are expected to be minor in overall quantities. Minor clayey soils, if encountered, should be selectively buried in deeper fills at least 4 feet below rough finish pad grades.

Project fills shall be clean deposits free of trash, debris, organic matter and deleterious materials consisting of minus 6-inch particles and include at least 40% finer than #4 sieve materials by weight. Trench and wall backfills shall consist of a minimum of 3-inch particles and maintain the minimum specified fines to rock ratio. Rocks larger than 6-inches in maximum diameter should not be allowed within site fills.

Uniform bearing soils conditions should be constructed at the site Terrace Deposit locations by the grading operations. Site soils should be adequately processed, thoroughly mixed, moisture conditioned to slightly (2%) above optimum moisture levels as directed in the field, placed in thin (8 inches maximum) uniform horizontal lifts and mechanically compacted to a minimum 90% of the corresponding laboratory maximum dry density per ASTM D-1557, unless otherwise specified.

5. **Import Soils**

Import soils, if required to complete remedial grading and achieve final design grades, should be good-quality, non-corrosive sandy granular (D.G.) deposits (100% passing 1-inch sieve, more than 50% passing #4 sieve and less than 18% passing #200 sieve with expansion index less than 21) tested and approved by the project soils engineer prior to delivery to the site. Import soils should also meet or exceed the engineering properties of site soils as specified in the following sections.

6. **Engineering Observations and Testing**

All ground stabilization work, grading, and earthwork operations including over-excavations, suitability of earth deposits used as compacted fills and backfills, and compaction procedures should be continuously observed and tested by the project geotechnical consultant and presented in the daily field and final as-constructed reports. The recommended construction procedures and specifications should be field verified or modified as necessary at that time. The nature of finished bearing and subgrade soils should be confirmed in the final compaction report at the completion of grading.

Geotechnical engineering observations should include but are not limited to the following:

- Initial observation - After clearing limits have been staked but before grading/brushing starts.

- Over-excavation observation - After excavations are started but before the vertical depths are more than 5 feet. Local and Cal-OSHA safety requirements for open excavations apply.

- Bottom of over-excavation observation - After the bottom of over-excavation is exposed and prepared to receive new fills or the stabilization geogrid, but before fill or geogrid is placed.

- Fill/backfill observation - After the fill/backfill placement is started but before the vertical height of fill/backfill exceeds 2 feet. A minimum of one test shall be required for each 100 lineal feet maximum in every 2 feet vertical gain maximum. Fills should be compacted to minimum specified (90% and 95%) compaction levels, or directed in the field. Finish rough and final pad grade tests shall be required regardless of fill thickness.

- Foundation trench observation - After the foundation trench excavation, but before steel placement.

- Foundation bearing/slab subgrade soil observation - Prior to the placement of concrete for proper moisture and specified compaction levels.

- Geotechnical foundation/slab steel observation - After the steel placement is completed but before the scheduled concrete pour.

- Underground utility/plumbing trench observation - After the trench excavation, but before placement of pipe bedding or installation of the underground facilities. Local and Cal-OSHA safety requirements for open excavations apply. Inspection of pipe bedding may also be required by the project geotechnical engineer.

- Underground utility/plumbing trench backfill observation - After the backfill placement is started above the pipe zone but before the vertical height of backfill exceeds 2 feet. Testing of the backfill within the pipe zone may also be required by the governing agencies. Pipe bedding and backfill materials shall conform to the governing agencies' requirements and project soils report if applicable. All trench backfills shall consist of good quality sand materials, as approved in the field and mechanically compacted to the specified minimum compaction levels. Plumbing trenches more than 12-inches deep maximum under the floor slabs should also be mechanically compacted and tested for minimum (95% or 90%) compaction levels. Flooding or jetting techniques as a means of compaction method should not be allowed.

- Pavement/improvements base and subgrade observation - Prior to the placement of concrete or asphalt for proper moisture and specified compaction levels.

B. Foundations and Floor Slabs

Project pad construction may be anticipated to consist of silty sand (SM) deposits with very low expansion potential (expansion index less than 21) within upper pad grades.

The following minimum recommendations are consistent with the anticipated foundation bearing soil material and site specific geotechnical conditions. Other foundation support systems are also available and may be considered, if desired. However, any foundation system other than those specified herein, if considered, should be reviewed by the project geotechnical engineer to assure conformance with the indicated site geotechnical conditions. Additional recommendations may also be required and should be given at the final plan review phase. All design recommendations should also be further confirmed and/or revised at the completion of ground stabilization and remedial grading based on the engineering characteristics of the foundation bearing soils and as-graded site geotechnical conditions, and presented in the final stabilization and compaction report. Foundation trenching within site areas exposing alluvium after minimum over-excavations can only begin after data reduction of monitoring records collected during and after remedial grading works and approval by the project geotechnical consultant.

1. Alluvium Areas: New buildings may be supported on shallow stiff stem wall or turned-down footings and spread pad foundations with interconnecting grade beams and slab-on-grade floors. Building foundations should be uniformly embedded into approved minimum 95% compacted fills as specified in this report.

   - Continuous stem wall foundations, and turned-down footings should be sized at least 18 inches wide and 24 inches deep for one and two-story structures. Spread pad footings should be at least 36 inches square and 18 inches deep and interconnected to the continuous foundations with grade beams. Grade beams should be at least 12 inches wide by 18 inches deep. Specified depths are measured from the lowest adjacent ground surface. Exterior continuous foundations or turned-down footings should enclose the entire building perimeter.

     Continuous interior and exterior stem wall foundations should be reinforced with a minimum of four #5 reinforcing bars. Place 2-#5 bars 3 inches above the bottom of the footings and 2-#5 bars 3 inches below the top of the stem wall. Turned-down footings should be reinforced with a minimum of 2-#5 bars at the top and 2-#5 bars at the bottom. Interconnecting grade beams should also be reinforced with a minimum of 2-#4 bars top and bottom. Reinforcement details for spread pad footings should be provided by the project architect/structural engineer.

- All interior slabs should be a minimum of 5 inches in thickness, reinforced with #4 reinforcing bars spaced 18 inches on center each way, placed near the slab mid-height. Slabs should be underlain by 4 inches of clean sand (SE 30 or greater) which is provided with a minimum 10-mil plastic moisture barrier placed mid-height in the sand.

  Provide "softcut" contraction/control joints consisting of sawcuts spaced 10 feet on centers each way for all interior slabs. Cut as soon as the slab will support the weight of the saw and operate without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. The sawcuts should be a minimum of 1¼ -inches in depth but should not exceed 1½ -inches deep maximum. Anti-ravel skid plates should be used and replaced with each blade to avoid spalling and raveling. Avoid wheeled equipments across cuts for at least 24 hours.

  Provide re-entrant corner reinforcement for all interior slabs. Re-entrant corners will depend on slab geometry and/or interior column locations. The enclosed Plate 17 may be used as a general guideline.

- The slab subgrade and foundation bearing soils should not be allowed to dry prior to pouring the concrete or additional ground preparations, moisture re-conditioning and recompaction will be necessary as directed in the field. The required moisture content of the bearing soils is approximately 3% (or as directed in the field) over the optimum moisture content to the depth of 24 inches below slab subgrade. Attempts should be made to maintain as-graded moisture contents in order to preclude the need for added ground preparations and moisture reconditioning of the subgrade and bearing soils.

- Foundation trenches and slab subgrade soils should be inspected and tested for proper moisture and specified compaction levels and approved by the project geotechnical consultant prior to the placement of steel reinforcement or concrete pour.

2. Terrace Deposit Areas: New buildings may be supported on shallow stiff stem wall or turned-down footings and spread pad foundations with interconnecting grade beams and slab-on-grade floors. Building foundations should be

uniformly embedded into approved minimum 90% compacted fills as specified in this report.

- Continuous stem wall foundations, and turned-down footings should be sized at least 15 inches wide and 18 inches deep for single-story structures, and 18 inches wide and 24 inches deep for two-story structures. Spread pad footings should be at least 24 inches square and 18 inches deep. Specified depths are measured from the lowest adjacent ground surface. Exterior continuous foundations or turned-down footings should enclose the entire building perimeter.

  Continuous interior and exterior stem wall foundations should be reinforced with a minimum of four #4 reinforcing bars. Place 2-#4 bars 3 inches above the bottom of the footings and 2-#4 bars 3 inches below the top of the stem wall. Turned-down footings should be reinforced with a minimum of 2-#4 bars at the top and 2-#4 bars at the bottom. Reinforcement details for spread pad footings should be provided by the project architect/structural engineer.

- All interior slabs should be a minimum of 4 inches in thickness, reinforced with #3 reinforcing bars spaced 18 inches on center each way, placed near the slab mid-height. Slabs should be underlain by 4 inches of clean sand (SE 30 or greater) which is provided with a minimum 10-mil plastic moisture barrier placed mid-height in the sand.

  Provide "softcut" contraction/control joints consisting of sawcuts spaced 10 feet on centers each way for all interior slabs. Cut as soon as the slab will support the weight of the saw and operate without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. The sawcuts should be a minimum of 1¼ -inches in depth but should not exceed 1½ -inches deep maximum. Anti-ravel skid plates should be used and replaced with each blade to avoid spalling and raveling. Avoid wheeled equipments across cuts for at least 24 hours.

  Provide re-entrant corner reinforcement for all interior slabs. Re-entrant corners will depend on slab geometry and/or interior column locations. The enclosed Plate 17 may be used as a general guideline.

- The slab subgrade and foundation bearing soils should not be allowed to dry prior to pouring the concrete or additional ground preparations, moisture re-conditioning and recompaction will be necessary as directed in the field. The required moisture content of the bearing soils is approximately 3% (or as directed in the field) over the optimum moisture content to the depth of 24 inches below slab subgrade. Attempts should be made to maintain as-graded moisture contents in order to preclude the need for added ground preparations and moisture reconditioning of the subgrade and bearing soils.

- Foundation trenches and slab subgrade soils should be inspected and tested for proper moisture and specified compaction levels and approved by the project geotechnical consultant prior to the placement of steel reinforcement or concrete pour.

C. Soil Design Parameters

The following soil design parameters are based on the tested representative samples of onsite earth deposits. All parameters should be re-evaluated when the characteristics of the final as-graded soils have been specifically determined:

1. Design wet unit weight = 125 pcf.
2. Design angle of internal friction = 31 degrees.
3. Design active soil pressure = 41 pcf (EFP), level backfill, cantilever, unrestrained walls.
4. Design at-rest soil pressure = 61 pcf (EFP), non-yielding, restrained walls.
5. Design passive resistance = 391 pcf (EFP), level surface at the toe.
6. Design coefficient of friction for concrete on soils = 0.40.
7. Design net allowable foundation pressure (minimum 18 inches wide footing embedded at least 24 inches into 95% compacted fill) = 1750 psf.
8. Design net allowable foundation pressure (minimum 15 inches wide footing embedded at least 18 inches into 90% compacted fill) = 1500 psf.
9. Allowable lateral bearing pressure = 150 psf/ft.

Notes:

- Use a minimum safety factor of 1.5 for wall over-turning and sliding stability. However, because large movements must take place before maximum passive resistance can be developed, a safety factor of 2 may be considered for sliding stability where sensitive structures and improvements are planned near or on top of retaining walls.

- When combining passive pressure and frictional resistance the passive component should be reduced by one-third.

- The net allowable foundation pressure provided herein was determined for footings having the indicated minimum widths and minimum depths for 95% compacted fill and 90% compacted fill. The indicated values may be increased by 20% for each additional foot of depth and each additional foot of width to a maximum of 5500 psf if needed. The allowable foundation pressure provided herein also applies to dead plus live loads and may be increased by one-third for wind and seismic loading.

- The allowable lateral bearing earth pressures may be increased by the amount of the designated value for each additional foot of depth to a maximum of 1500 pounds per square foot.

D. Exterior Concrete Slabs / Flatworks

1. All exterior slabs (walkways, patios) supported on very low expansive subgrade soils should be a minimum of 4 inches in thickness, reinforced with #3 bars at 16 inches on centers in both directions placed near the slab mid-height. The subgrade soils should be compacted to the minimum specified compaction levels at the time of fine grading and before placing the slab reinforcement.

   In order to enhance performance of exterior slabs and flatwork, a minimum 8 inches wide by 8 inches deep thickened edge reinforced with a minimum of 1-#4 continuous bar near the bottom should be considered along the slab perimeter. Tying the slab panels to adjacent curbs, where they occur, with #3 bars at 16 inches on centers, may also be considered.

2. Reinforcements lying on subgrade will be ineffective and shortly corrode due to lack of adequate concrete cover. Reinforcing bars should be correctly placed extending through the construction joints tying the slab panels. In construction practices where the reinforcements are discontinued or cut at the construction joints, slab panels should be tied together with minimum 18 inches long #3 dowels (dowel baskets) at 16 inches on centers placed mid-height in the slab (9 inches on either side of the joint).

3. Provide "tool joint" or "softcut" contraction/control joints spaced 10 feet on center (not to exceed 12 feet maximum) each way. The larger dimension of any panel shall not exceed 125% of the smaller dimension. Tool or cut as soon as slab will support weight, and can be operated without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. Tool or softcuts should be a minimum of 1¼ -inches in depth but should not exceed 1½ -inches deep maximum. In case of softcut joints, anti-ravel skid plates should be used and replaced with each blade to avoid spalling and raveling. Avoid wheeled equipments across cuts for at least 24 hours.

   Joints shall intersect free-edges at a 90° angle and shall extend straight for a minimum of 1½ feet from the edge. The minimum angle between any two intersecting joints shall be 80°. Align joints of adjacent panels. Also, align joints in attached curbs with joints in slab panels. Provide adequate curing using approved methods (curing compound maximum coverage rate = 200 sq. ft./gal.).

4. All exterior slab designs should be confirmed in the final as-graded compaction report.

5. Subgrade soils should be tested for proper moisture and specified compaction levels and approved by the project geotechnical consultant prior to the placement of concrete.

E. Asphalt and PCC Pavement Design

1. Asphalt Paving: Specific pavement designs can best be provided at the completion of rough grading based on R-value tests of the actual finish subgrade soils; however, the following structural sections may be considered for initial planning phase cost estimating purposes only (not for construction):

   - A minimum section of 3 inches asphalt on 4 inches Class 2 aggregate base or the minimum structural section required by the City of Oceanside, whichever is more, may be considered for the on-site asphalt paving surfaces outside the private and public right-of-way.

   - The Class 2 aggregate base shall meet or exceed the current Green Book Standard Specifications for Public Works Construction and Regional Supplement Amendments, 2003, Sections 400-2.3. Base materials should be compacted to a minimum 95% of the corresponding maximum dry density (ASTM D-1557). Subgrade soils beneath the asphalt paving surfaces should also be compacted to a minimum 95% of the corresponding maximum dry density within the upper 12 inches.

2. PCC Pavings: Residential PCC driveways and parking supported on very low expansive (expansion index less than 20) granular subgrade soils should be a minimum 5 inches in thickness, reinforced with #3 reinforcing bars at 18 inches on centers each way placed at mid-height in the slab. Subgrade soils beneath the PCC driveways and parking should also be compacted to a minimum 95% of the corresponding maximum dry density.

   Reinforcements lying on subgrade will be ineffective and shortly corrode due to lack of adequate concrete cover. Reinforcing bars should be correctly placed extending through the construction joints tying the slab panels. In construction practices where the reinforcements are discontinued or cut at the construction joints, slab panels should be tied together with minimum 18 inch long #3 dowels (dowel baskets) at 18 inches on centers maximum placed mid-height in the slab (9 inches on either side of the joint). In the areas where longitudinal grades exceed 15%, also provide a minimum 8 inches wide by 8 inches deep pavement anchors constructed perpendicular to the pavement longitudinal profile into the approved subgrade at each 25 feet intervals maximum. The pavement anchors should be poured monolithically with the concrete paving surfaces.

Provide "tool joint" or "softcut" contraction/control joints spaced 10 feet on center (not to exceed 15 feet maximum) each way. The larger dimension of any panel shall not exceed 125% of the smaller dimension. Tool or cut as soon as the slab will support the weight and can be operated without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. Tool or softcuts should be a minimum of 1-inch in depth but should not exceed 1¼-inches deep maximum. In case of softcut joints, anti-ravel skid plates should be used and replaced with each blade to avoid spalling and raveling. Avoid wheeled equipments across cuts for at least 24 hours.

Joints shall intersect free edges at a 90° angle and shall extend straight for a minimum of 1½ feet from the edge. The minimum angle between any two intersecting joints shall be 80°. Align joints of adjacent panels. Also, align joints in attached curbs with joints in slab panels. Provide adequate curing using approved methods (curing compound maximum coverage rate = 200 sq. ft./gal.)

3. Subgrade and basegrade soils should be tested for proper moisture and specified compaction levels, and approved by the project geotechnical consultant prior to the placement of the base or asphalt/PCC finish surface.

4. Base section and subgrade preparation per structural section design will be required for all surfaces subject to traffic including roadways, travelways, drive lanes, driveway approaches and ribbon (cross) gutters. Driveway approaches within the public right-of-way should have 12 inches subgrade compacted to a minimum 95% compaction levels, and provided with 95% compacted Class 2 base section per the structural section design.

   Base layer under curb and gutters should be compacted to a minimum 95%, while subgrade soils under curb and gutters, and base and subgrade under sidewalks should be compacted to minimum 90% compaction levels. Base section may not be required under curb and gutters, and sidewalks in the case of very low expansive subgrade soils (expansion index less than 21). Appropriate recommendations should be given in the final as-graded compaction report.

F. General Recommendations

1. The minimum foundation design and steel reinforcement provided herein are based on soil characteristics and are not intended to be in lieu of reinforcement necessary for structural considerations.

2. Adequate staking and grading control are critical factors in properly completing the recommended remedial and site grading operations. Grading control and staking should be provided by the project grading contractor or surveyor/civil engineer, and is beyond the geotechnical engineering services. Inadequate staking and/or lack of grading control may result in unnecessary additional grading which will increase construction costs.

3. Open or backfilled trenches parallel with a footing shall not be below a projected plane having a downward slope of 1-unit vertical to 2 units horizontal (50%) from a line 9 inches above the bottom edge of the footing, and not closer than 18 inches from the face of such footing.

4. Where pipes cross under-footings, the footings shall be specially designed. Pipe sleeves shall be provided where pipes cross through footings or footing walls, and sleeve clearances shall provide for possible footing settlement, but not less than 1-inch all around the pipe.

5. Foundations where the surface of the ground slopes more than 1 unit vertical in 10 units horizontal (10% slope) shall be level or shall be stepped so that both top and bottom of such foundations are level. Individual steps in continuous footings shall not exceed 18 inches in height and the slope of a series of such steps shall not exceed 1 unit vertical to 2 units horizontal (50%) unless otherwise specified. The steps shall be detailed on the structural drawings. The local effects due to the discontinuity of the steps shall also be considered in the design of foundations as appropriate and applicable.

6. Expansive clayey soils should not be used for backfilling of any retaining structure. All retaining walls should be provided with a 1:1 wedge of granular, compacted backfill measured from the base of the wall footing to the finished surface and a well-functioning back drainage system as shown on the enclosed Plate 18. Planting large trees behind site building/basement retaining walls should be avoided.

7. All underground utility and plumbing trenches should be mechanically compacted to a minimum of 95% (or 90%) of the maximum dry density of the soil unless otherwise specified. Care should be taken not to crush the utilities or pipes during the compaction of the soil. Non-expansive, granular backfill soils

should be used. Trench backfill materials and compaction beneath pavements within the public right-of-way shall conform to the requirements of governing agencies.

8. Maintaining a uniform as-graded soil moisture during the post construction periods is essential in the future performance and stability of site structures and improvements. Excessive irrigation resulting in wet soil conditions should be avoided. Hydro modification design and location of associated drainage improvements should be completed considering characteristics of onsite soils. Surface water should not be allowed to infiltrate into the underlying bearing and subgrade soils, wall backfills, or impact graded embankments.

9. Site drainage over the finished pad surfaces should flow away from structures onto the street in a positive manner. Care should be taken during the construction, improvements, and fine grading phases not to disrupt the designed drainage patterns. Roof lines of the buildings should be provided with roof gutters. Roof water should be collected and directed away from the buildings and structures to a suitable location.

10. Final plans should reflect preliminary recommendations given in this report. Final foundations and grading plans should also be reviewed by the project geotechnical consultant for conformance with the requirements of the geotechnical investigation report outlined herein. More specific recommendations may be necessary and should be given when final grading and architectural/structural drawings are available.

11. All foundation trenches should be inspected to ensure adequate footing embedment and confirm competent bearing soils. Foundation and slab reinforcements should also be inspected and approved by the project geotechnical consultant.

12. The amount of shrinkage and related cracks that occur in the concrete slab-on-grades, flatworks and driveways depend on many factors the most important of which is the amount of water in the concrete mix. The purpose of the slab reinforcement is to keep normal concrete shrinkage cracks closed tightly. The amount of concrete shrinkage can be minimized by reducing the amount of water in the mix. To keep shrinkage to a minimum, the following should be considered:

    - Use the stiffest mix that can be handled and consolidated satisfactorily.

    - Use the largest maximum size of aggregate that is practical. For example, concrete made with ⅜-inch maximum size aggregate usually require about

40-lbs. more (nearly 5-gal.) water per cubic yard than concrete with 1-inch aggregate.

- Cure the concrete as long as practical.

The amount of slab reinforcement provided for conventional slab-on-grade construction considers that good quality concrete materials, proportioning, craftsmanship, and control tests, where appropriate and applicable, are provided.

13. A preconstruction meeting between representatives of this office, the property owner or planner, city inspector as well as the grading contractor/builder is recommended in order to discuss grading and construction details associated with site development.

XI. GEOTECHNICAL ENGINEER OF RECORD (GER)

Vinje & Middleton Engineering, Inc. will be the geotechnical engineer of record (GER) for providing a specific scope of work or professional service under a contractual agreement unless it is terminated or canceled by either the client or our firm. In the event a new geotechnical consultant or soils engineering firm is hired to provide added engineering services, professional consultations, grading engineering observations, field inspections, and compaction testing, Vinje & Middleton Engineering, Inc. will no longer be the geotechnical engineer of the record. Project transfer should be completed in accordance with the California Geotechnical Engineering Association (CGEA) Recommended Practice for Transfer of Jobs Between Consultants.

The new geotechnical consultant or soils engineering firm should review all previous geotechnical documents, conduct an independent study, and provide appropriate confirmations, revisions or design modifications to his own satisfaction. The new geotechnical consultant or soils engineering firm should also notify in writing Vinje & Middleton Engineering, Inc. and submit proper notification to the City of Oceanside for the assumption of responsibility in accordance with the applicable codes and standards (1997 UBC Section 3317.8).

XII. LIMITATIONS

The conclusions and recommendations provided herein have been based on available data obtained from the review of available reports and maps, subsurface exploratory excavations, engineering analysis, as well as our experience with the soils and formational materials located in the general area. The materials encountered on the project site and utilized in our laboratory testing are believed representative of the total area; however, earth materials may vary in characteristics between excavations.

Of necessity, we must assume a certain degree of continuity between exploratory excavations and/or natural exposures. It is necessary, therefore, that all observations, conclusions, and recommendations be verified during the grading operation. In the event discrepancies are noted, we should be contacted immediately so that an inspection can be made and additional recommendations issued if required.

The recommendations made in this report are applicable to the site at the time this report was prepared. It is the responsibility of the owner/developer to ensure that these recommendations are carried out in the field.

It is almost impossible to predict with certainty the future performance of a property. The future behavior of the site is also dependent on numerous unpredictable variables, such as earthquakes, rainfall, and on-site drainage patterns.

The firm of VINJE & MIDDLETON ENGINEERING, INC., shall not be held responsible for changes to the physical conditions of the property such as addition of fill soils, added cut slopes, or changing drainage patterns which occur without our inspection or control.

The property owner(s) should be aware that the development of cracks in all concrete surfaces such as floor slabs and exterior stucco are associated with normal concrete shrinkage during the curing process. These features depend chiefly upon the condition of concrete and weather conditions at the time of construction and do not reflect detrimental ground movement. Hairline stucco cracks will often develop at window/door corners, and floor surface cracks up to ⅛-inch wide by 20 feet may develop as a result of normal concrete shrinkage (according to the American Concrete Institute).

This report should be considered valid for a period of one year and is subject to review by our firm following that time. If significant modifications are made to your tentative development plan, especially with respect to the height and location of cut and fill slopes, this report must be presented to us for review and possible revision.

This report is issued with the understanding that the owner or his representative is responsible to ensure that the information and recommendations are provided to the project architect/structural engineer so that they can be incorporated into the plans. Necessary steps shall be taken to ensure that the project general contractor and subcontractors carry out such recommendations during construction.

The project geotechnical engineer should be provided the opportunity for a general review of the project final design plans and specifications in order to ensure that the recommendations provided in this report are properly interpreted and implemented. The project geotechnical engineer should also be provided the opportunity to verify the foundations prior to the placing of concrete. If the project geotechnical engineer is not provided the opportunity of making these reviews, he can assume no responsibility for misinterpretation of his recommendations.

Vinje & Middleton Engineering, Inc., warrants that this report has been prepared within the limits prescribed by our client with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended.

Once again, should any questions arise concerning this report, please do not hesitate to contact this office. Reference to our **Job #15-188-P** will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

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AS-BUILT SURVEY

LEGEND

- BUILDING LINE
- PROPERTY LINE
- CENTERLINE
- LOT LINE
- AERIAL ELECTRIC LINE
- ASPHALT
- FENCE LINE
- WALL LINE
- CONCRETE AREA
- LIGHT
- POWER POLE
- WATER METER
- L/S LANDSCAPED AREA
- BSL BUILDING SETBACK LINE
- GP GUY POLE
- GA GUY ANCHOR
- WV WATER VALVE
- FSP FIRE STAND PIPE
- SLPB STREET LIGHT PULL-BOX
- TMH TELEPHONE MANHOLE
- SMH SEWER MANHOLE
- SDMH STORMDRAIN MANHOLE
- GV GAS VALVE
- SCO SEWER CLEAN OUT
- TC TOP OF CURB ELEVATION
- FL FLOW LINE ELEVATION
- FOUND CENTERLINE WELL MONUMENT
- FOUND 2" IRON PIPE

VICINITY MAP

NO SCALE

GENERAL NOTES

- ALL ADJACENT LOTS ARE CONTIGUOUS TO SAID LAND WITH NO INTERVENING GAPS OR GORES.
- SAID LAND IS CONTIGUOUS WITH AND HAS DIRECT ACCESS TO NORTH RIVER ROAD AND THERE ARE NO INTERVENING GAPS OR GORES.
- THE POINT OF ENTRY OR EXIT OF ALL UTILITIES AND SANITARY AND STORM SEWERS ARE THROUGH PUBLICLY DEDICATED STREETS UNLESS OTHERWISE SHOWN HEREON.

BENCHMARK

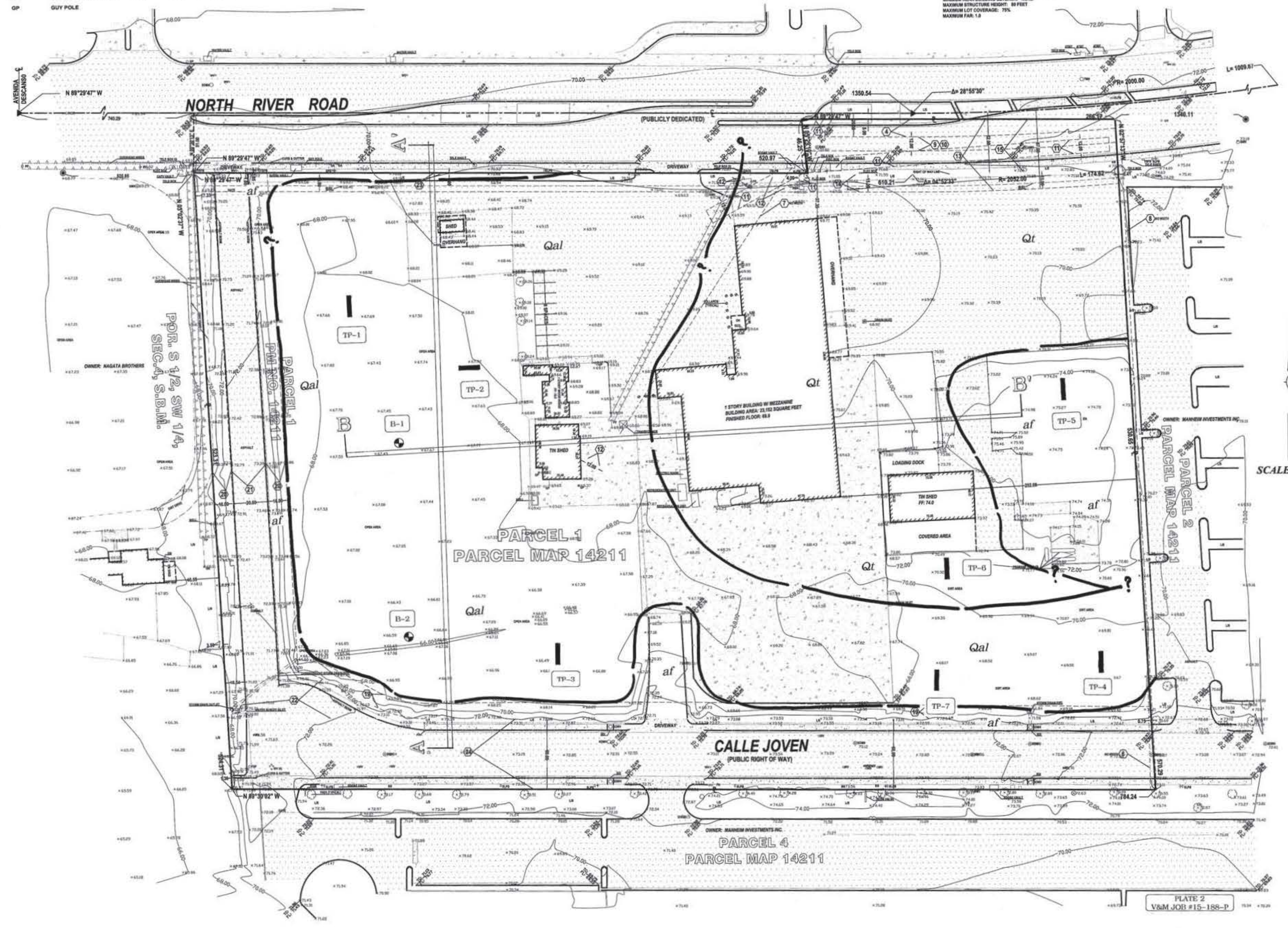
- CITY OF OCEANSIDE BENCHMARK #A-36, FOUND BRASS SCREW & WASHER STAMPED "COS BM A-36", TOP OF CURB, NORTHEAST RETURN OF NORTH RIVER ROAD & AVENIDA DESCANSO. EL= 68.947' (1988 ADJUSTED).

SITE ADDRESS: 4665 NORTH RIVER ROAD, OCEANSIDE, CA
PROPERTY AREA: 9.706 ACRES (422,793 SQUARE FEET)
ZONE: " IR " (INDUSTRIAL)
TOTAL PARKING: 8 SPACES (INCLUDING 0 HANDICAP SPACES)
FLOOD ZONE: " X " MAP NO.: 060 73C 0756, DATED: 01/19/2001
"SAID PROPERTY DOES NOT LIE WITHIN A FEMA DESIGNATED 100-YR FLOOD PLAIN"

GEOTECHNICAL MAP

ZONING NOTES

MINIMUM FRONT BUILDING SETBACK: 10 FEET
MINIMUM SIDE YARD BUILDING SETBACK: NONE
MINIMUM CORNER SIDE BUILDING SETBACK: 10 FEET
MINIMUM REAR BUILDING SETBACK: NONE
MAXIMUM STRUCTURE HEIGHT: 80 FEET
MAXIMUM LOT COVERAGE: 75%
MAXIMUM FAR: 1.0



SCALE: 1" = 40'

LEGAL DESCRIPTION

Real property in the City of Oceanside, County of San Diego, State of California, described as follows:

PARCEL 1 OF PARCEL MAP NO. 14211, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, FEBRUARY 27, 1986.

APN: 157-050-48-00

EASEMENT NOTES

PER: First American Title Insurance Company
ORDER NO.: 3319614 (50)
DATED: June 09, 2009

3. An easement for open ditch, flume line and incidental purposes, recorded November 23, 1909 in Book 461 of Deeds, Page 41.
In Favor of: Hayes Land Co.
Affects: The land
The location of the easement cannot be determined from record information.
"SAID ITEM CANNOT BE PLOTTED"

4. An easement shown or dedicated on the Map as referred to in the legal description
For: Public road purposes and incidental purposes.

5. An easement for right of way for pipelines, motor, pump and incidental purposes, recorded June 30, 1943 in Book 1518, Page 62 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation of the Sixth Class
Affects: The route or location of said easement cannot be determined from the record
The location of the easement cannot be determined from record information.
"SAID ITEM CANNOT BE PLOTTED"

6. An easement for either or both pole lines, underground conduits and incidental purposes, recorded July 25, 1946 in Book 2155, Page 220 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land

7. An easement for either or both pole lines, underground conduits and incidental purposes, recorded May 16, 1949 in Book 3195, Page 204 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land

8. An easement for either or both pole lines, underground conduits and incidental purposes, recorded November 20, 1952 in Book 4661, Page 1 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land
"CENTERLINE OF SAID ITEM IS NOT WITHIN SAID PROPERTY"

9. An easement for right to construct, reconstruct, repair, replace, operate, maintain and use sanitary sewer and appurtenances and incidental purposes, recorded June 11, 1964 as Instrument No. 105495 of Official Records.
In Favor of: City of Oceanside
Affects: Said land

10. An easement for either or both pole lines, underground conduits and incidental purposes, recorded February 14, 1969 as Instrument No. 27637 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land

11. An easement for either or both pole lines, underground conduits and incidental purposes, recorded February 21, 1969 as Instrument No. 31879 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land

12. An easement for either or both pole lines, underground conduits and incidental purposes, recorded April 6, 1973 as Instrument No. 89903 of Official Records.
In Favor of: San Diego Gas and Electric Company
Affects: Said land

13. An easement for sewer, effluent water main and incidental purposes, recorded February 19, 1974 as Instrument No. 040619 of Official Records.
In Favor of: City of Oceanside
Affects: Said land

14. An easement for sewer, effluent water main and incidental purposes, recorded February 19, 1974 as Instrument No. 040620 of Official Records.
In Favor of: City of Oceanside
Affects: Said land

15. An easement for public highway, utility and incidental purposes, recorded October 11, 1984 as Instrument No. 84-385625 of Official Records.
In Favor of: City of Oceanside
Affects: Said land

16. The terms and provisions contained in the document entitled Public Improvements executed by and between SCHU Properties, a General Partnership and City of Oceanside recorded November 14, 1985 as Instrument No. 85-425345 of Official Records.
"SAID ITEM CANNOT BE PLOTTED"

17. The terms and provisions contained in the document entitled Street Improvements executed by and between Raymond Kawano, et al and City of Oceanside recorded January 13, 1986 as Instrument No. 86-014211 of Official Records.
"SAID ITEM CANNOT BE PLOTTED"

18. The Parcel Map referred to in the Legal Description herein contains various restrictions in improving or developing the property herein described, reference is made to said Parcel Map for further particulars.
"SAID ITEM CANNOT BE PLOTTED"

19. An easement for slopes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381279 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

20. An easement for slopes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381281 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

21. An easement for emergency access and utility and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381283 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

22. An easement for temporary turn around and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381284 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

23. An easement for public right of way purposes and incidental purposes, recorded June 19, 1992 as Instrument No. 92-0381286 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

24. An easement for public right of way purposes and incidental purposes, recorded June 25, 1992 as Instrument No. 92-0404303 of Official Records.
In Favor of: City of Oceanside, a Municipal Corporation
Affects: Said land

SURVEYORS CERTIFICATE

THIS IS TO CERTIFY THAT SAID MAP IS TRUE AND CORRECT AS SHOWN. THE POSITIONAL UNCERTAINTIES RESULTING FROM THE SURVEY MEASUREMENTS MADE ON THE SURVEY DO NOT EXCEED THE ALLOWABLE POSITIONAL TOLERANCES FOR AN URBAN SURVEY.

SIGNED: SOLOMON S. HANDY
REGISTRATION NO.: LS -7594
DATE: 8/24/09

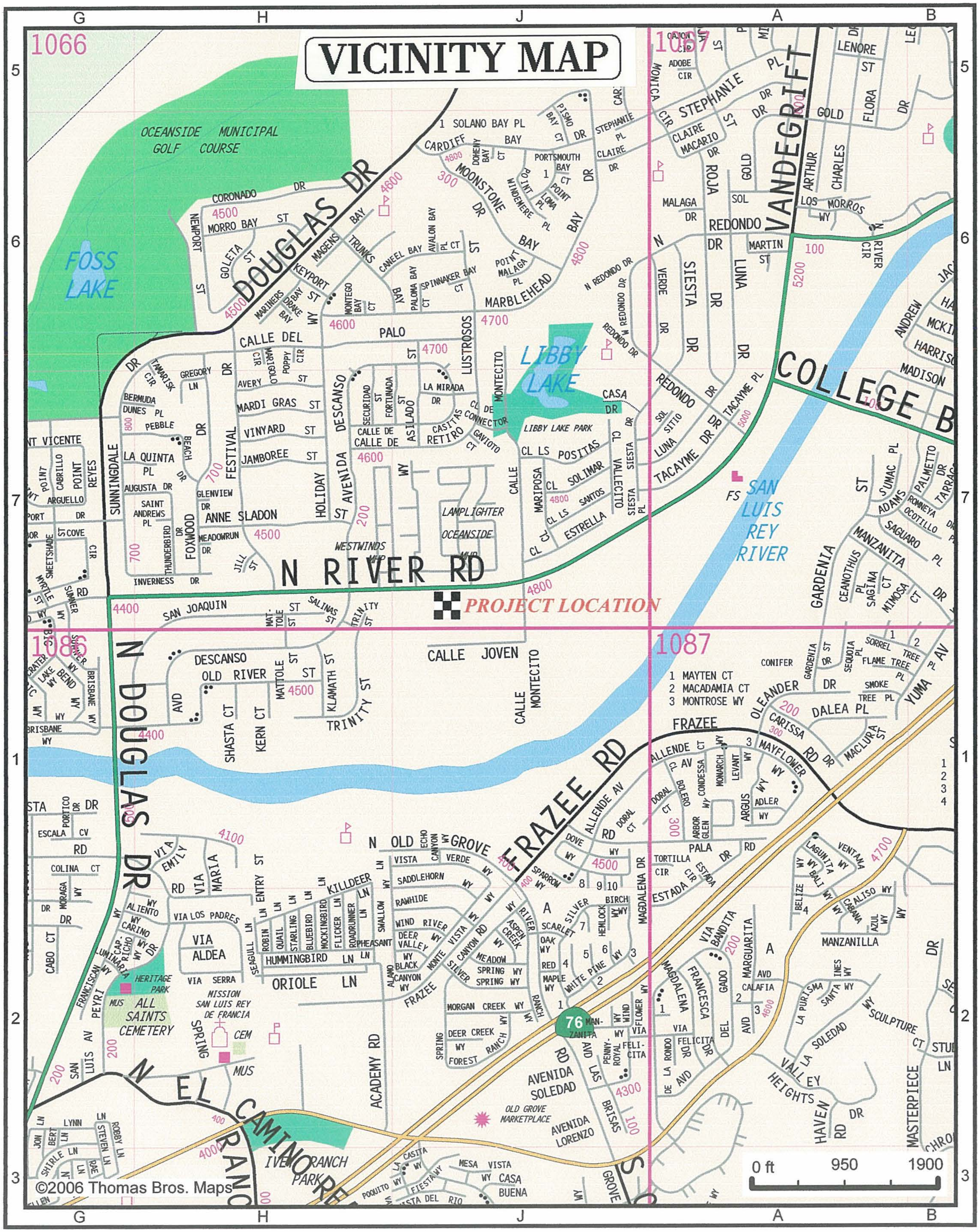
GEOTECHNICAL LEGEND

- Approx. Location of Test Pit
- Approx. Location of Test Boring
- Geologic Cross-Section
- af Fill (Approx.)
- Qal Alluvium (Approx.)
- Qt Terrace Deposit (Approx.)

PLATE 2
V&M JOB #15-188-P

REVISED: AUG. 26, 2009
JOB NO. 32-021-09

DASK LAND SURVEYING
DASK LAND SURVEYING
960 RANCHEROS DRIVE, SU
SAN MARCOS, CA 9206
PHONE: 760-740-1383
FAX: 760-740-1384



PROJECT LOCATION: 1066 - J7

PLATE 1
V&M JOB #15-188-P

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES	GM	Silty gravels, gravel-sand mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Claye sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS & CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS LIQUID LIMIT IS MORE THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic soils
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat or other highly organic soils

GRAIN SIZES

U.S. STANDARD SERIES SIEVE — CLEAR SQAURE SIEVE OPENINGS

	200	40	10	4	¾"	3"	12"	
SILTS & CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

RELATIVE DENSITY

SANDS, GRAVELS & NON-PLASTIC SILTS	BLOWS / FOOT
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

CONSISTENCY

CLAYS & PLASTIC SILTS	STRENGTH	BLOWS / FOOT
VERY SOFT	0 - ¼	0 - 2
SOFT	¼ - ½	2 - 4
FIRM	½ - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

1. BLOW COUNT: 140 POUND HAMMER FALLING 30-INCHES ON A 2-INCH DIAMETER O.D. SPLIT SPOON SAMPLER (ASTM D-1586)
2. UNCONFINED COMPRESSIVE STRENGTH PER SOILTEST POCKET PENETROMETER CL-700

▼ Sand Cone Test ■ Bulk Sample ⊠ 2 4 6 Standard Penetration Test (SPT) - (ASTM D-1586) With Blow Counts Per 6-Inches

□ Chunk Sample ○ Driven Rings ⊠ 2 4 6 California Sampler With Blow Counts Per 6-Inches

VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029

KEY TO BORING / TEST PITS LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

December, 2013

VINJE & MIDDLETON ENGINEERING, INC. — TEST PIT: TP-1

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. Caving below 8 feet.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
0–1		SM	**Alluvium (Qal):**					
1–2.5		SM	Silty fine sand. Micaceous. Light grey color. Dry. Somewhat blocky. Loose. ST-1	Bulk / Chunk	3	104.9	83	13
3		SM	Blocky and medium dense below at 3 feet.					
4.5		SM		Chunk	3	97.5	77	11
6.5		SM		Chunk	3	96.6	76	11
8		SM	Becomes loose at 8 feet. Slightly blocky. Continues dry. Local running sand. Caving below 8 feet.	Chunk	3	105.2	83	13
10		SM	Damp at 10 feet. Continued caving (running sand).	Chunk	9	94.1	74	30
12.5		SM		Chunk	7	92.8	73	23
14.5		SM		Chunk	11	85.5	67	31
15			Extent of backhoe.					

Bottom of test pit at 15.0 feet.

BULK SAMPLE CHUNK SAMPLE DENSITY TEST GROUND WATER

PLATE 3

VINJE & MIDDLETON ENGINEERING, INC. **TEST PIT: TP-2**

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. Caving below 8 feet.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
0–15		SM	**Alluvium (Qal):** Silty fine sand. Micaceous. Light grey color. Dry. Somewhat blocky. Loose to medium dense. ST-1					
~3.5				Chunk	3	104.8	82	13
~6.5				Chunk	3	102.6	81	13
8			Damp at 8 feet. Locally blocky. Loose.					
10			Damp to moist at 10 feet. Local running sand. Caving. Loose to very loose.	Chunk	6	102.5	81	25
~14.5				Chunk	4	99.7	78	16
15			Extent of backhoe.					

Bottom of test pit at 15.0 feet.

BULK SAMPLE	CHUNK SAMPLE	DENSITY TEST	GROUND WATER

VINJE & MIDDLETON ENGINEERING, INC. | TEST PIT: TP-3

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. Significant caving.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
0–1			**Alluvium (Qal):**					
1–2			Silty fine sand. Micaceous. Dry. Blocky. Loose to medium dense. ST-1					
2–2.5				Chunk	2	118.8	94	27
3–4		SM	Loose to very loose at 3 feet. Significant caving below 3 feet. Local running sand.					
5–5.5				Chunk	12	102.9	81	51
7								

Test pit ended at 7 feet due to sidwall caving.

Bottom of test pit at 7.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 5

VINJE & MIDDLETON ENGINEERING, INC. **TEST PIT: TP-4**

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. Significant caving.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
0–3		SM-SP	**Fill (af):** Silty fine to medium sand. Brown to tan color. Blocky. Moderately compacted. ST-2					
2				Bulk, Chunk	9	118.2	87	55
3–12		SM	**Alluvium (Qal):** Silty fine sand. Micaceous. Light grey to brown color. Damp. Slightly blocky. Loose. ST-1 Running sand at 5 feet. Striated. Very loose. Damp. Significant caving.					
4				Bulk, Chunk	3	108.7	86	15
6				Chunk	8	118.0	93	50
11				Chunk	2	119.3	94	13

Test pit ended at 12 feet due to sidewall caving.
Bottom of test pit at 12.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 6

VINJE & MIDDLETON ENGINEERING, INC. **TEST PIT: TP-5**

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. No caving.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
			Gravel-covered surface.					
1			**Fill (af):**					
2		SM	Silty fine sand. Slightly micaceous. Brown color. Damp. Moderately compacted. ST-1	Chunk	6	105.6	83	27
3								
4			**Terrace Deposit (Qt):**	Bulk, Chunk	7	118.7	88	43
5			Sandstone. Fine to medium grained. Red brown color. Blocky. Moderately cemented. Massive. Dense. ST-2					
6		SP-SW		Chunk	7	114.0	84	38
7								
8				Chunk	7	117.2	87	42

Bottom of test pit at 8.5 feet.

BULK SAMPLE CHUNK SAMPLE DENSITY TEST GROUND WATER

VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-6

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. No caving.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
1		SM	**Fill (af):** Silty fine sand. Brown color. Dry. Blocky. Medium dense. ST-1					
2				Chunk sample	3	108.8	81	14
3		SP-SW	**Terrace Deposit (Qt):** Sandstone. Fine to medium grained. Red brown color. blocky. Cemented. Massive. Dense. ST-2					
4				Chunk sample	4	118.4	88	24

Bottom of test pit at 4.5 feet.

BULK SAMPLE   CHUNK SAMPLE   DENSITY TEST   GROUND WATER

VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-7

PROJECT: Proposed Residential Development **CLIENT:** So Cal Ag Properties, Inc.

PROJECT NUMBER: 15-188-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

Date Excavated: 8/26/15 **Logged By:** SJM

Equipment: Case 580 Backhoe

Remarks: No groundwater. Significant caving below 3 feet.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
0			Gravel-covered surface.					
1–3		SM	**Fill (af):** Silty fine sand. Brown color. Damp. Firm. ST-1					
3–6		SM	**Alluvium (Qt):** Silty fine sand. Micaceous. Light grey color. Dry to damp. Striated. Very loose. Running sand. Significant caving. ST-1					
5				Chunk	12	87.7	69	35
6			Test pit ended at 6 feet due to significant sidewall caving.					

Bottom of test pit at 6.0 feet.

BULK SAMPLE CHUNK SAMPLE DENSITY TEST GROUND WATER

VINJE & MIDDLETON ENGINEERING, INC. **Boring: B-1**

PROJECT: Proposed Residential Development **CLIENT:** So Ca Ag Properties, Inc.

PROJECT NUMBER: 15-118-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

DATE LOGGED: 12/4/2015 **BOREHOLE DIA:** 8-Inch **LOGGED BY:** SJM

CONTRACTOR: Scott's Drilling **DRILL METHOD:** Truck-Mounted Rotary Drill. Hollow Stem Auger.

SAMPLE METHOD: 140 LB. Hammer dropped 30-inches by rope & cathead. 5-Foot AW rods.

REMARKS: No Caving. No Groundwater. Trap Used in Sampler Due to Cohesionless Characteristic of Alluvium.

DEPTH (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	SAMPLE TYPE	BLOW COUNTS	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
			Alluvium (Qal):						
2			Silty fine sand. Slightly micaceous. Grey color. Dry to damp. Very loose. ST-1						
4									
6			Loose at 5 feet. Continues dry to damp.	Modified California Sampler	12-14	3	101.0	79	12
8									
10		SM		Modified California Sampler	14-16	3	101.6	80	12
12			Damp to locally moist below 10 feet. Loose.						
14									
16			Medium dense at 15 feet. Continues damp to locally moist.	Modified California Sampler	11-16	3	-	Sample Disturbed	10
18									
20			Becomes relatively tight at 20 feet. Moist. Medium dense.	Modified California Sampler	14-13	7	-	Sample Disturbed	28

Bottom of borehole at 21.0 feet.

STANDARD PENETRATION TEST MODIFIED CALIFORNIA SAMPLER BULK SAMPLE GROUND WATER

PLATE **10**

VINJE & MIDDLETON ENGINEERING, INC. **BORING: B-2**

PROJECT: Proposed Residential Development **CLIENT:** So Ca Ag Properties, Inc.

PROJECT #: 15-118-P **PROJECT LOCATION:** 4665 North River Road, Oceanside

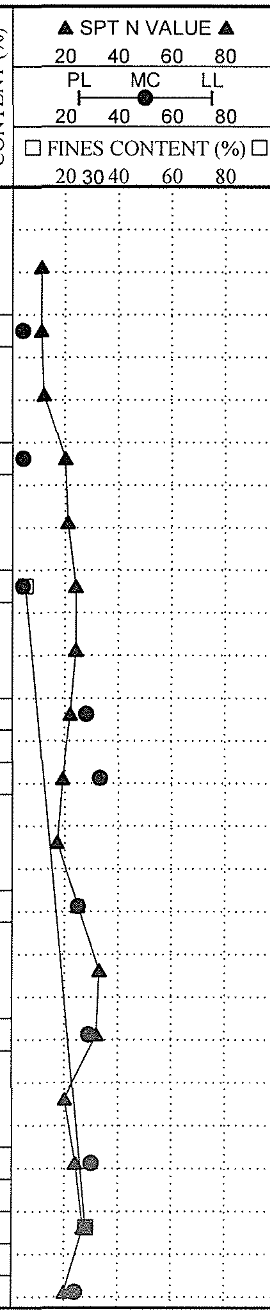
DATE DRILLED: 12/4/2015 **BOREHOLE DIA:** 8-Inch **LOGGED BY:** SJM

CONTRACTOR: Scott's Drilling **DRILL METHOD:** Truck-Mounted Rotary Drill. Hollow Stem Auger.

SAMPLE METHOD: 140 LB. Hammer dropped 30-inches by rope & cathead. 5-Foot AW rods.

REMARKS: No Caving. Groundwater at 26-27 Feet. Trap Used in Sampler Due to Cohesionless Character of Alluvium.

DEPTH (ft)	U.S.C.S.	MATERIAL DESCRIPTION	BLOW COUNTS	MOISTURE CONTENT (%)
0	SM	**Alluvium (Qal):**		
		Silty fine sand. Slightly micaceous. Grey color. Dry to damp. Very loose. ST-1	4-6-5 (11)	
			5-5-6 (11)	4
10		Loose and damp at 9 feet. Locally fine to medium grained.	6-6-6 (12)	
		Becomes medium dense at 12 feet. Damp.	16-11-9 (20)	4
			7-9-12 (21)	
20		Two 1" - 2" thick clay seams in sampe at 21 feet. Clay is dark grey color, moist, plastic, and soft. Surrounding silty sand is loose to medium dense and damp to moist.	11-12-12 (24)	4
			10-9-15 (24)	
		Very moist to wet at 24 feet.		
		Static groundwater level measured at 26 feet below the surface prior to proceding with mud-drilling.	9-11-11 (22)	28
		Groundwater at 27 feet at time of drilling. Saturated. Loose to medium dense.	6-10-9 (19)	33
30		Changed to mud-drilling method at 30 feet.	4-7-10 (17)	
		Locally clay-bearing sandy deposits below 30 feet. Saturated. Loose to medium dense.	4-11-14 (25)	25
		Becomes relatively tight and dense at 36 feet. Fine grained. Saturated.	10-16-17 (33)	
40			8-13-19 (32)	29
		Medium dense to locally dense below 40 feet.	8-8-12 (20)	
			6-9-15 (24)	30
50			7-10-17 (27)	28
		Continues medium dense to dense and saturated at 50 feet.	7-8-12 (20)	24



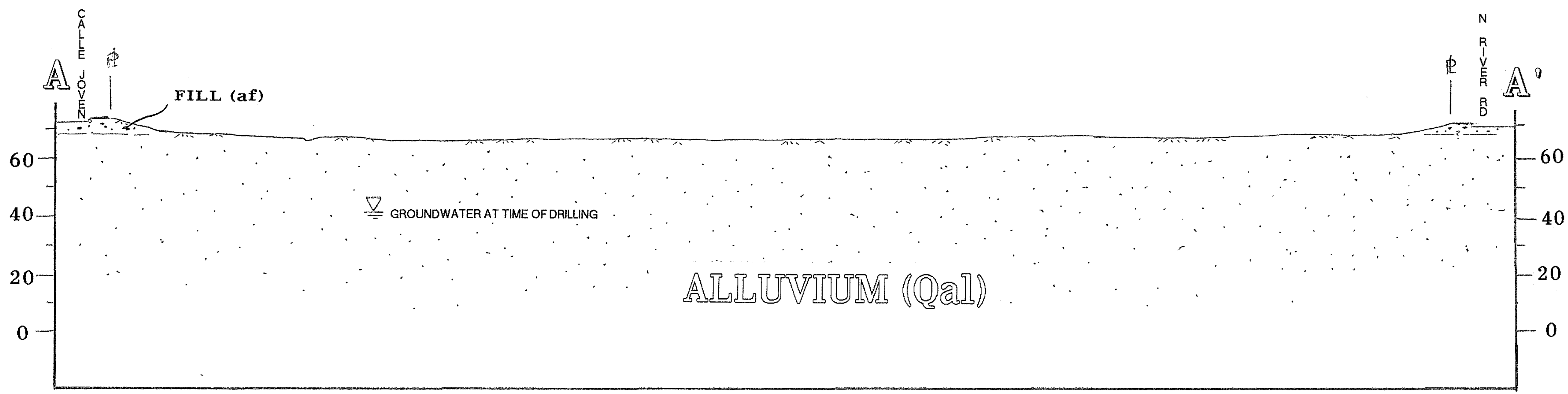
Bottom of borehole at 52.5 feet.

STANDARD PENETRATION TEST | MODIFIED CALIFORNIA SAMPLER | BULK SAMPLE | GROUND WATER

PLATE 11

GEOLOGIC CROSS-SECTIONS

SCALE: 1" = 40'



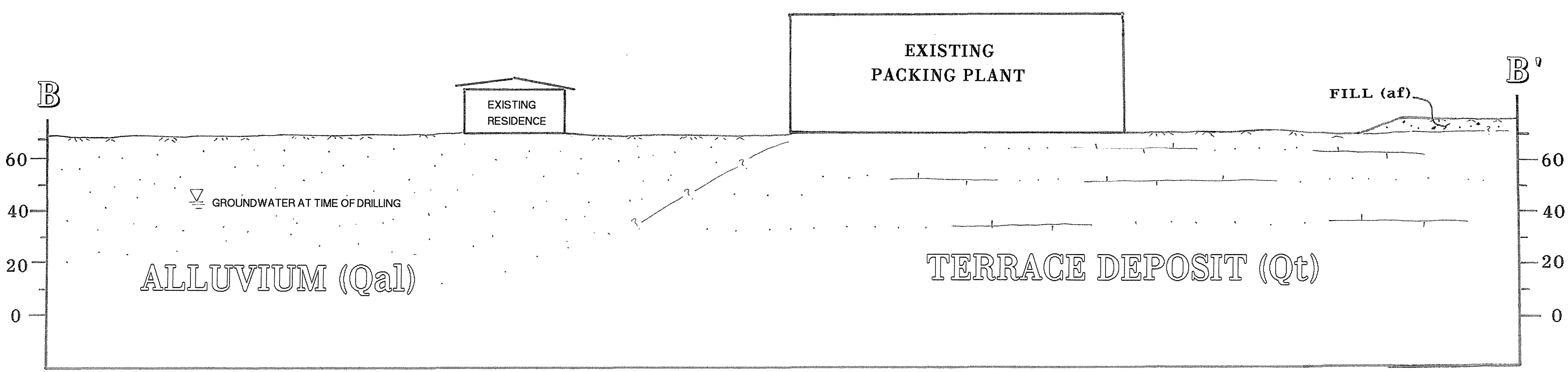
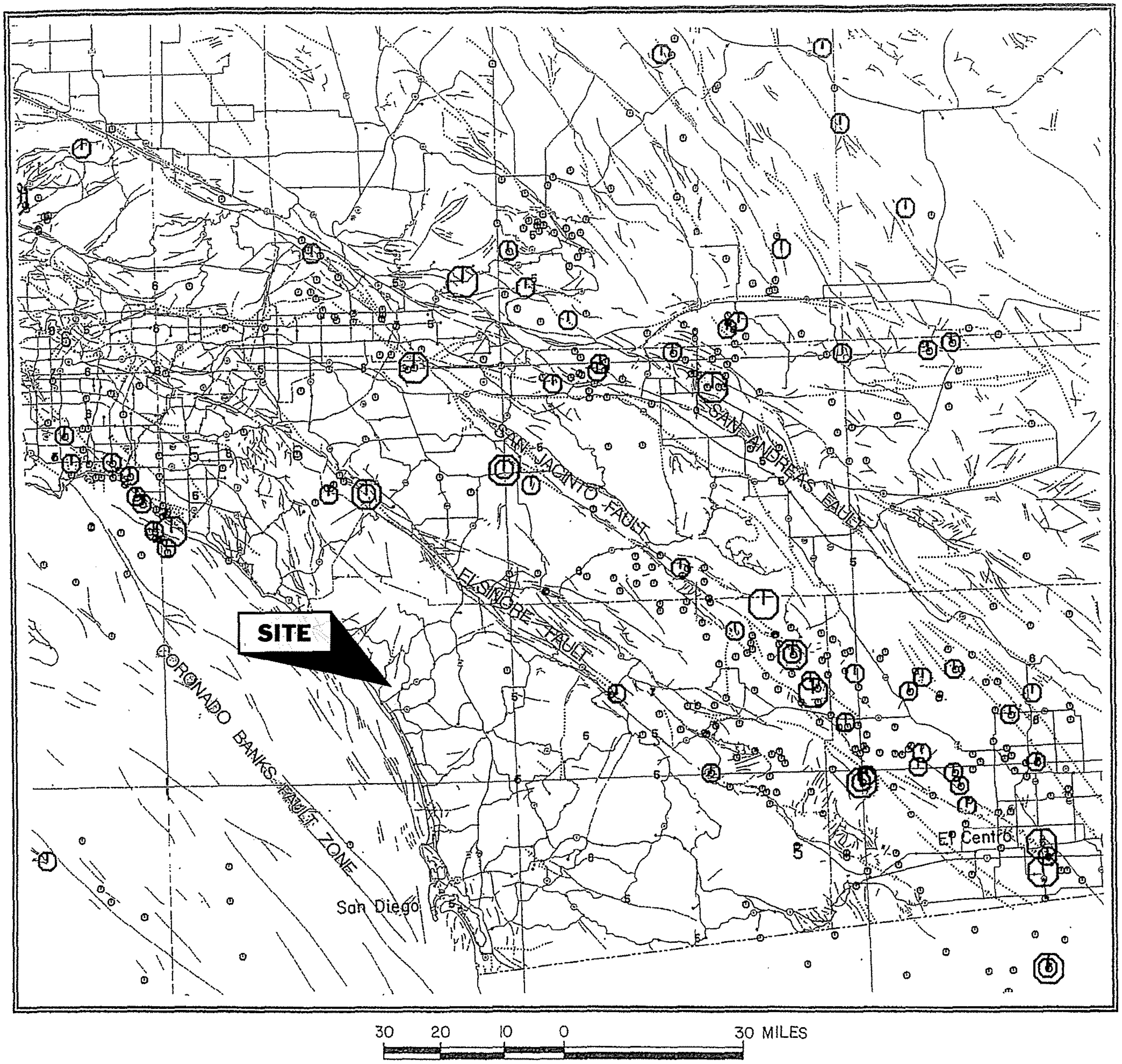


PLATE 12
V&M JOB #15-188-P

FAULT-EPICENTER MAP
SAN DIEGO COUNTY REGION



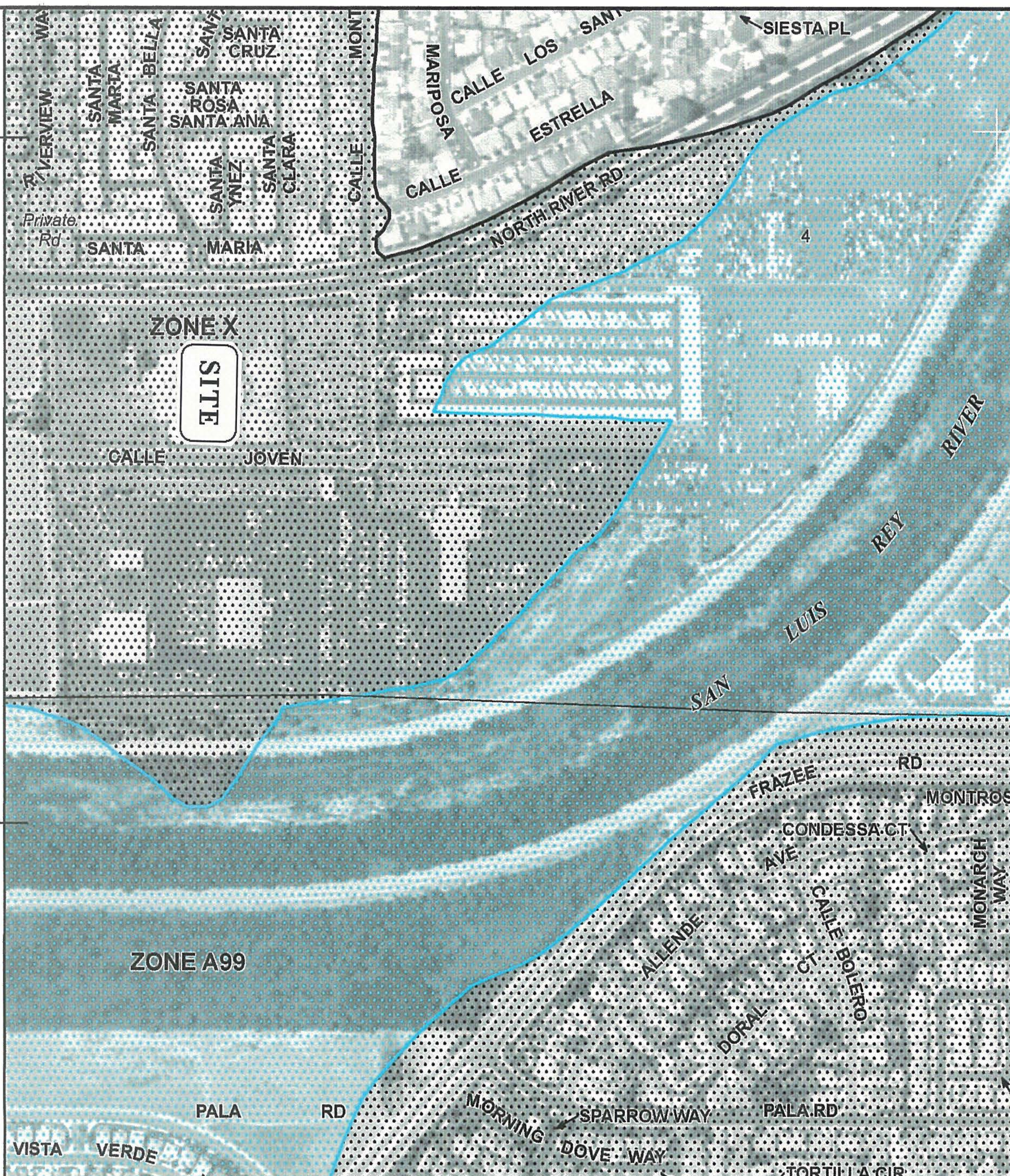
INDICATED EARTHQUAKE EVENTS THROUGH 75 YEAR PERIOD (1900-1974)

Map data is compiled from various sources including California Devision of Mines and Geology, California Institute of Technology and the National Oceanic and Atmospheric Administration. Map is reproduced from California Division of Mines and Geology, "Earthquake Epicenter Map of California; Map Sheet 39." 1978

MAGNITUDE

.... 4.0 TO 4.9
.... 5.0 TO 5.9
.... 6.0 TO 6.9

Fault



ance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0756H

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 756 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OCEANSIDE, CITY OF	060294	0756	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 06073C0756H

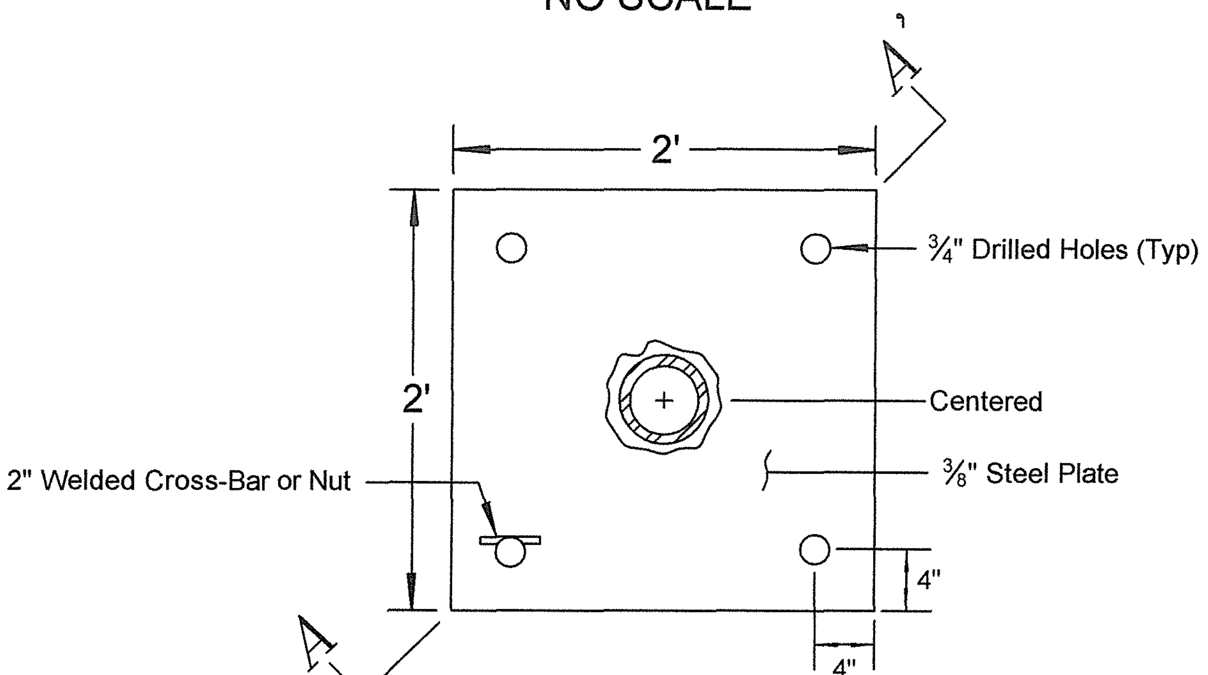
MAP REVISED MAY 16, 2012

Federal Emergency Management Agency

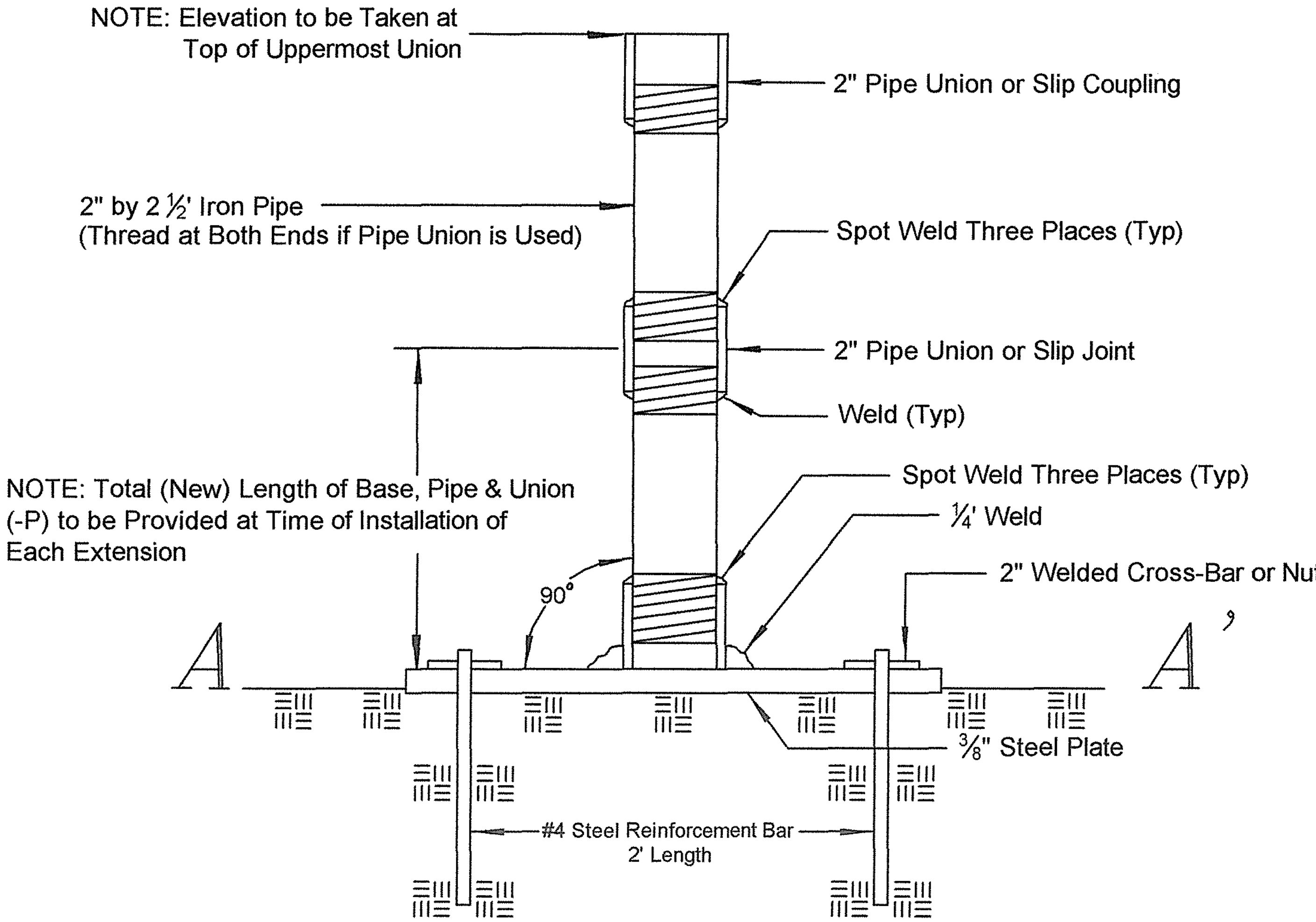
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

PLATE 14
V&M JOB #15-188-P

SETTLEMENT PLATE SCHEMATIC
NO SCALE



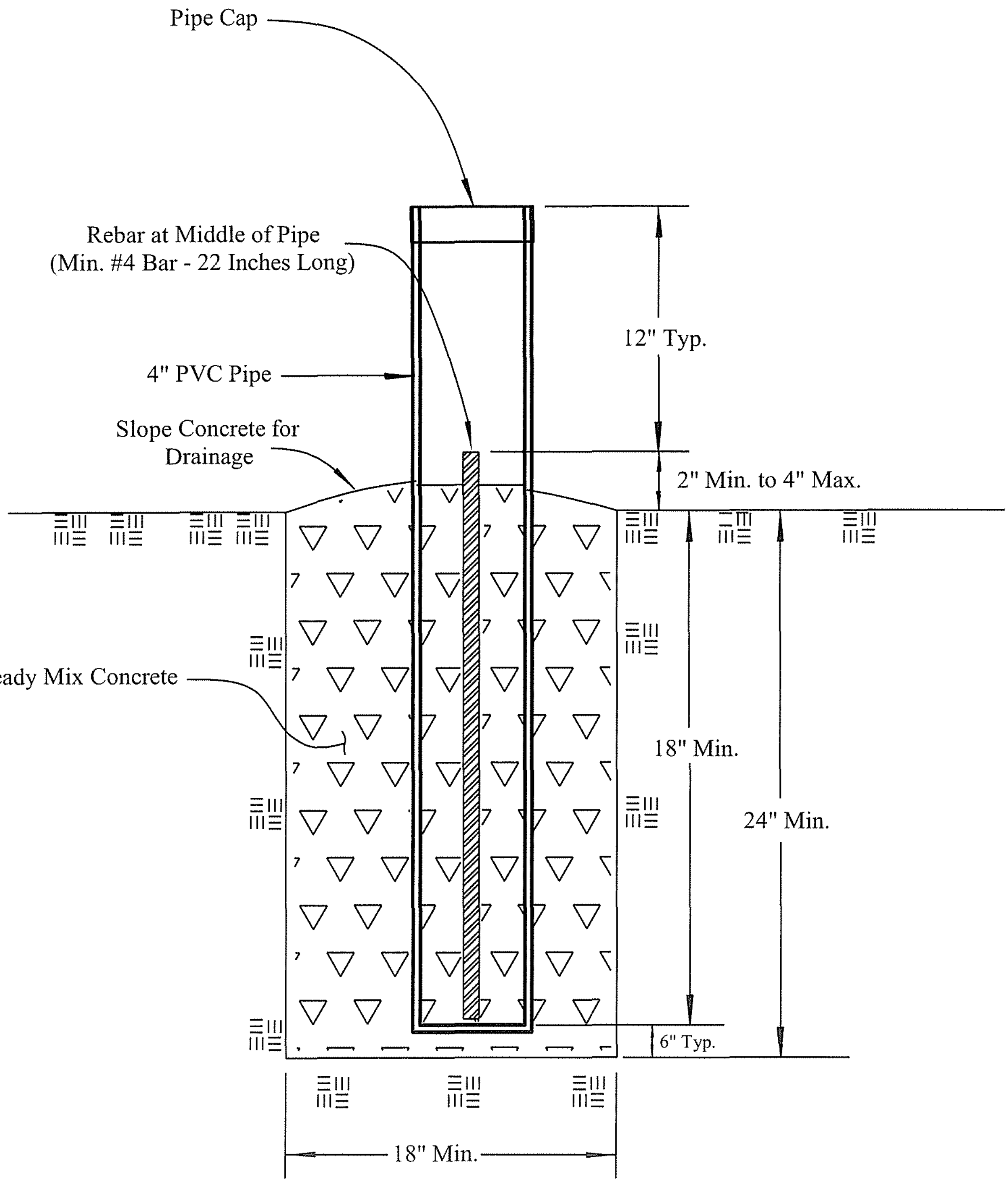
PLAN VIEW



CROSS-SECTION PROFILE

PLATE 15
V&M JOB #15-188-P

SETTLEMENT MONUMENT
SCHEMATIC
NO SCALE

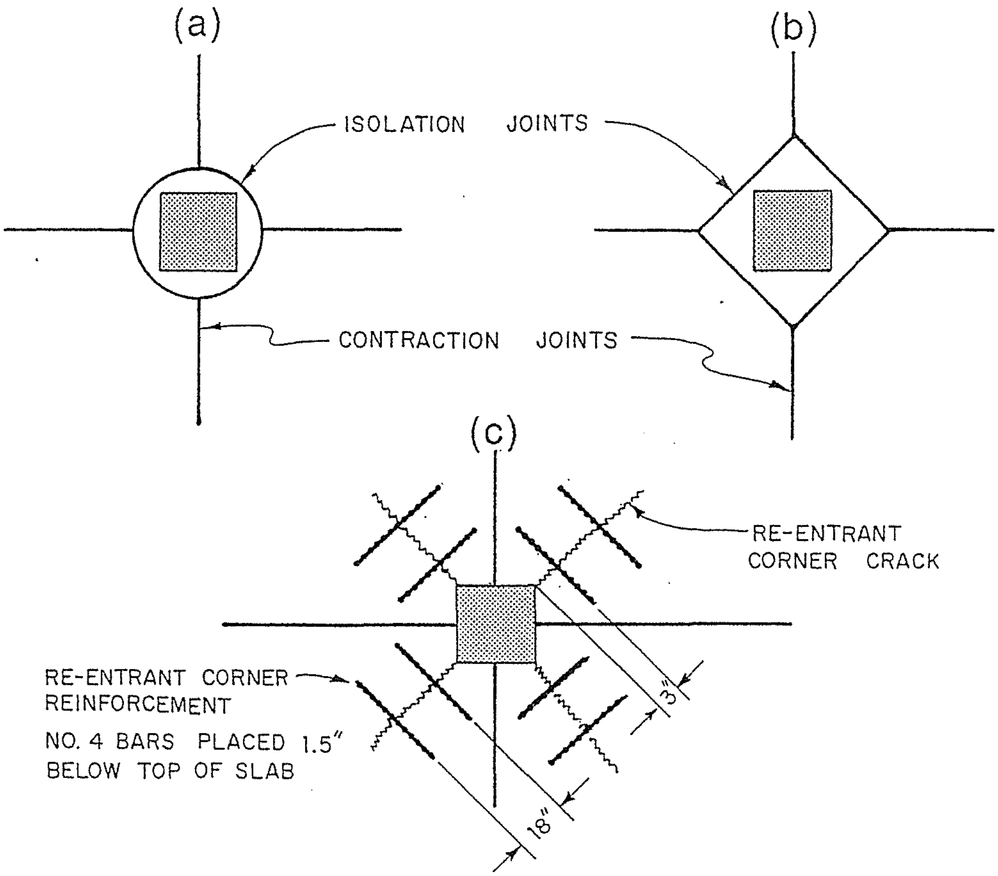


Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California

PLATE 16
V&M JOB #15-188-P

ISOLATION JOINTS AND RE-ENTRANT CORNER REINFORCEMENT

Typical - no scale



NOTES:

1. Isolation joints around the columns should be either circular as shown in (a) or diamond shaped as shown in (b). If no isolation joints are used around columns, or if the corners of the isolation joints do not meet the contraction joints, radial cracking as shown in (c)may occur (reference ACI).

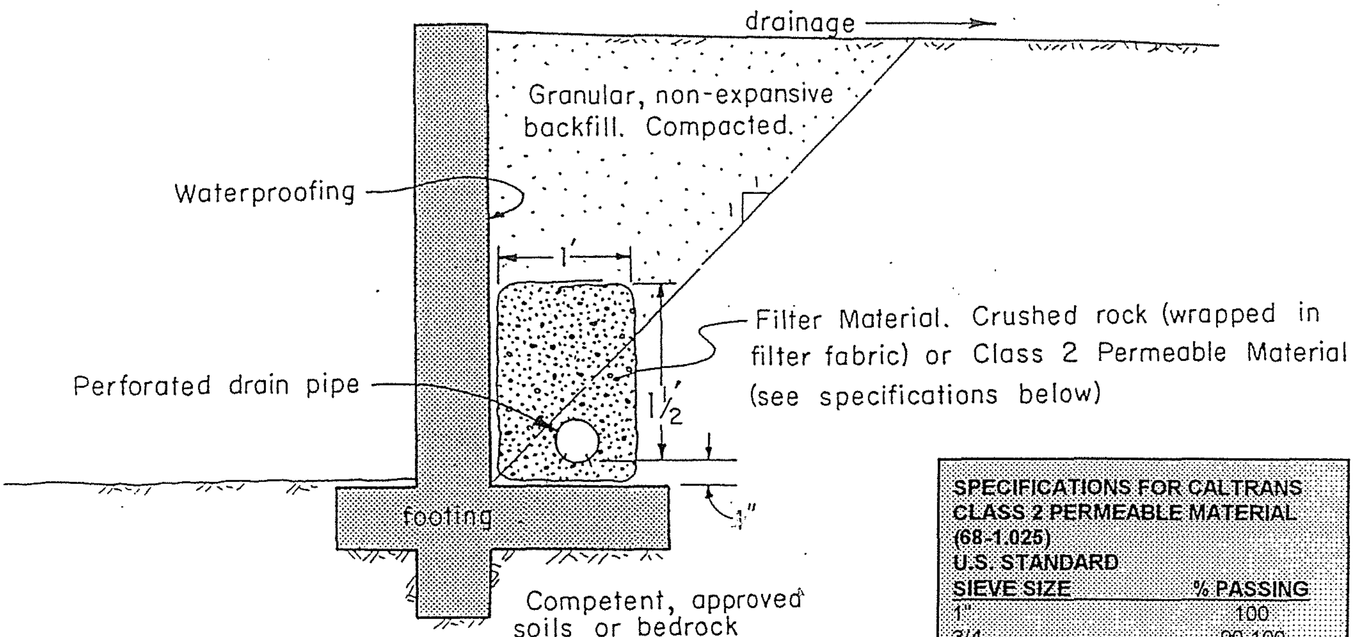
2. In order to control cracking at the re-entrant corners (±270° corners), provide reinforcement as shown in (c).

3. Re-entrant corner reinforcement shown herein is provided as a general guideline only and is subject to verification and changes by the project architect and/or structural engineer based upon slab geometry, location, and other engineering and construction factors.

VINJE & MIDDLETON ENGINEERING, INC.

RETAINING WALL DRAIN DETAIL

Typical - no scale



SPECIFICATIONS FOR CALTRANS CLASS 2 PERMEABLE MATERIAL (68-1.025)

U.S. STANDARD

SIEVE SIZE	% PASSING
1"	100
3/4	90-100
3/8	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

Sand Equivalent > 75

CONSTRUCTION SPECIFICATIONS:

1. Provide granular, non-expansive backfill soil in 1:1 gradient wedge behind wall. Compact backfill to minimum 90% of laboratory standard.

2. Provide back drainage for wall to prevent build-up of hydrostatic pressures. Use drainage openings along base of wall or back drain system as outlined below.

3. Backdrain should consist of 4" diameter PVC pipe (Schedule 40 or equivalent) with perforations down. Drain to suitable outlet at minimum 1%. Provide ¾" - 1½" crushed gravel filter wrapped in filter fabric (Mirafi 140N or equivalent). Delete filter fabric wrap if Caltrans Class 2 permeable material is used. Compact Class 2 material to minimum 90% of laboratory standard.

4. Seal back of wall with waterproofing in accordance with architect's specifications.

5. Provide positive drainage to disallow ponding of water above wall. Lined drainage ditch to minimum 2% flow away from wall is recommended.

* Use 1½ cubic foot per foot with granular backfill soil and 4 cubic foot per foot if expansive backfill soil is used.

VINJE & MIDDLETON ENGINEERING, INC.

APPENDIX

USGS Design Maps Summary Report

User–Specified Input

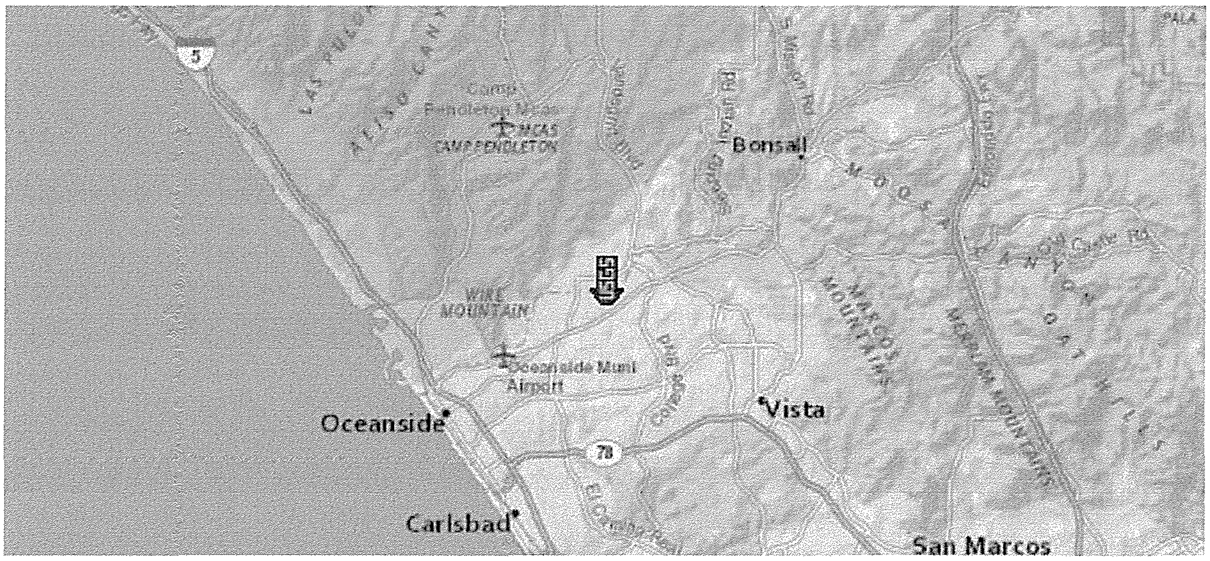
Report Title 15-188-P 4665 North River Road, Oceanside
Sat December 19, 2015 17:15:40 UTC

Building Code Reference Document ASCE 7-10 Standard
(which utilizes USGS hazard data available in 2008)

Site Coordinates 33.2445°N, 117.3106°W

Site Soil Classification Site Class D – "Stiff Soil"

Risk Category I/II/III

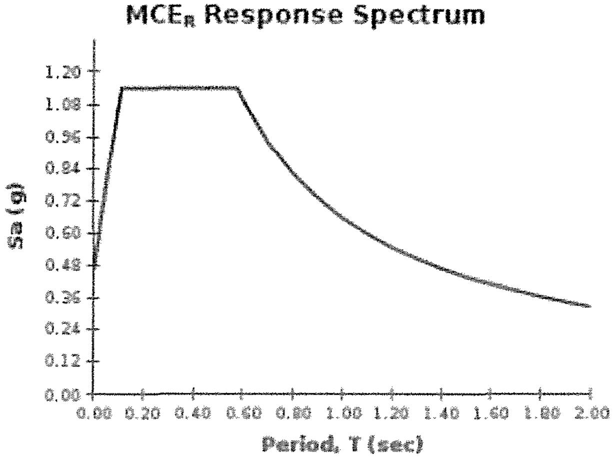


USGS–Provided Output

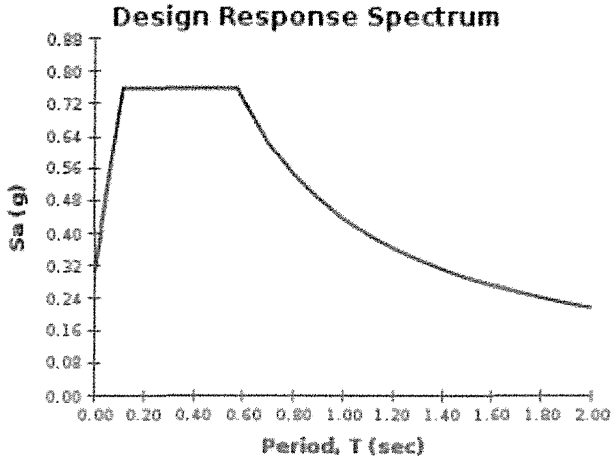
S_S =	1.057 g	**S_{MS} =**	1.139 g	**S_{DS} =**	0.759 g
S_1 =	0.413 g	**S_{M1} =**	0.656 g	**S_{D1} =**	0.437 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

MCE_R Response Spectrum



Design Response Spectrum



For PGA_M, T_L, C_{RS}, and C_{R1} values, please view the detailed report.

USGS Design Maps Detailed Report

ASCE 7-10 Standard (33.2445°N, 117.3106°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_S) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From Figure 22-1 [1]	S_S = 1.057 g
From Figure 22-2 [2]	S_1 = 0.413 g

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

Site Class	$\bar{v}_s$	$\bar{N}$ **or** $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index *PI* > 20, • Moisture content *w* ≥ 40%, and • Undrained shear strength $\bar{s}_u$ < 500 psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient F_a

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at Short Period				
	$S_S \le 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \ge 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_S

For Site Class = D and S_S = 1.057 g, F_a = 1.077

Table 11.4-2: Site Coefficient F_v

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at 1-s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_1

For Site Class = D and S_1 = 0.413 g, F_v = 1.587

Equation (11.4-1):	$S_{MS} = F_a S_S = 1.077 \times 1.057 = 1.139$ g
Equation (11.4-2):	$S_{M1} = F_v S_1 = 1.587 \times 0.413 = 0.656$ g

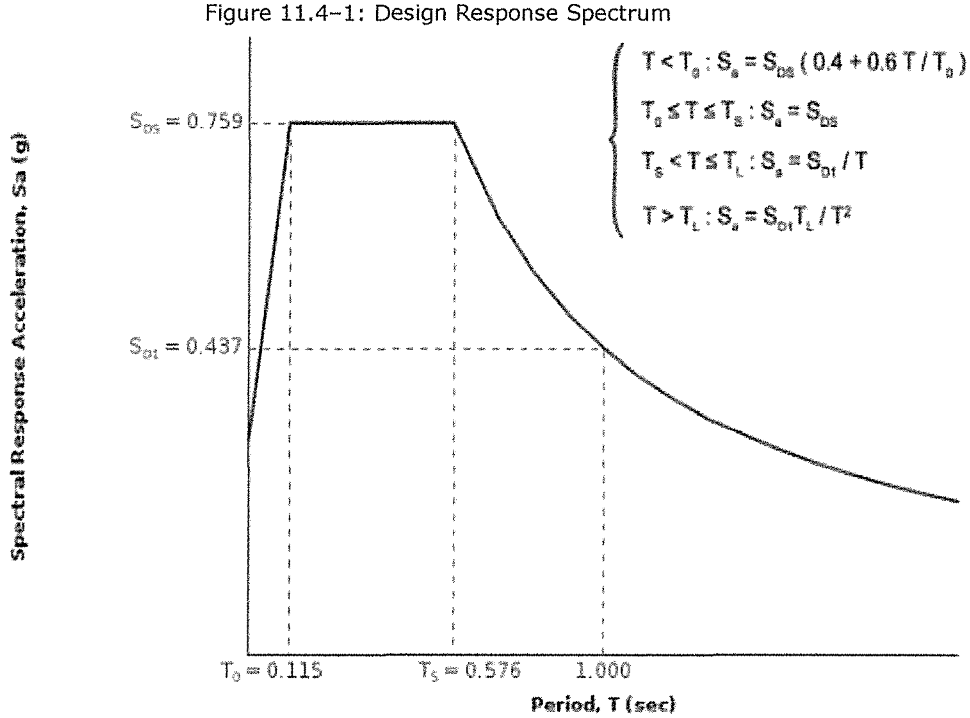
Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4-3):	$S_{DS} = ⅔\ S_{MS} = ⅔ \times 1.139 = 0.759$ g
Equation (11.4-4):	$S_{D1} = ⅔\ S_{M1} = ⅔ \times 0.656 = 0.437$ g

Section 11.4.5 — Design Response Spectrum

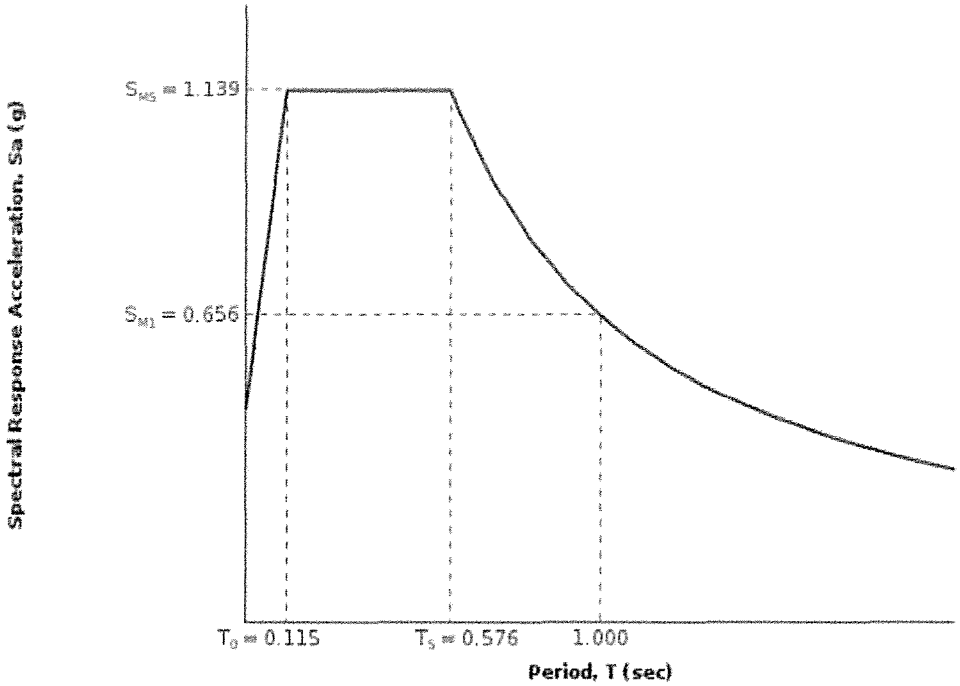
From Figure 22-12[3]	$T_L = 8$ seconds

Figure 11.4-1: Design Response Spectrum



Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.395

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.105 \times 0.395 = 0.437$ g

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

For Site Class = D and PGA = 0.395 g, F_{PGA} = 1.105

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 1.015

From Figure 22-18 [6] C_{R1} = 1.062

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.759 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.437 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 22-1*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

APPENDIX K
GEOTECHNICAL INVESTIGATION REPORT – WESTERN PARCEL

CHRISTIAN WHEELER
ENGINEERING

REPORT OF GEOTECHNICAL INVESTIGATION

NAGATA PROPERTY
4617 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA

PREPARED FOR

NAGATA BROTHERS FARMS, INC.
PO BOX 220
OCEANSIDE, CALIFORNIA 92068

PREPARED BY

CHRISTIAN WHEELER ENGINEERING
3980 HOME AVENUE
SAN DIEGO, CALIFORNIA 92105

CHRISTIAN WHEELER
ENGINEERING

December 2, 2015

Nagata Brothers Farms, Inc. CWE 2140692.01
PO Box 220
Oceanside, California 92068
Attention: Neil Nagata

Subject: Report of Geotechnical Investigation
Nagata Property, 4617 North River Road, Oceanside, California

Ladies and Gentlemen:

In accordance with our Proposal dated November 20, 2014, we have completed a preliminary geotechnical investigation for the subject project. We are presenting herein our findings and recommendations.

In general, we found the subject property suitable for the proposed construction, provided the recommendations provided herein are followed. Based on the results of our investigation, the most significant geotechnical conditions to affect the proposed construction are the presence of deep alluvial soils that are potentially liquefiable under earthquake loads and surficial soils that are potential compressible under additional static loads. The liquefaction potential will require mitigation in the form of ground improvement below the planned buildings while the surficial soils will require overexcavation and recompaction.

If you have any questions after reviewing this report, please do not hesitate to contact our office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING

Shawn Caya, R.G.E. #2748

David. Russell, C.E.G. #2215

Distribution: (1) Neil Nagata via email

REGISTERED PROFESSIONAL ENGINEER
SHAWN C. CAYA
GE2748
EXP. 6/30/2016
GEOTECHNICAL
STATE OF CALIFORNIA

REGISTERED GEOLOGIST
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CERTIFIED
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GEOLOGIST
Exp. 09-15
STATE OF CALIFORNIA

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REPORT OF GEOTECHNICAL INVESTIGATION

NAGATA PROPERTY
4617 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA

INTRODUCTION AND PROJECT DESCRIPTION

This report presents the results of a geotechnical investigation performed for a proposed residential development to be constructed at 4617 North River Road, in the city of Oceanside, California. Figure Number 1, on the following page, presents a vicinity map showing the location of the project.

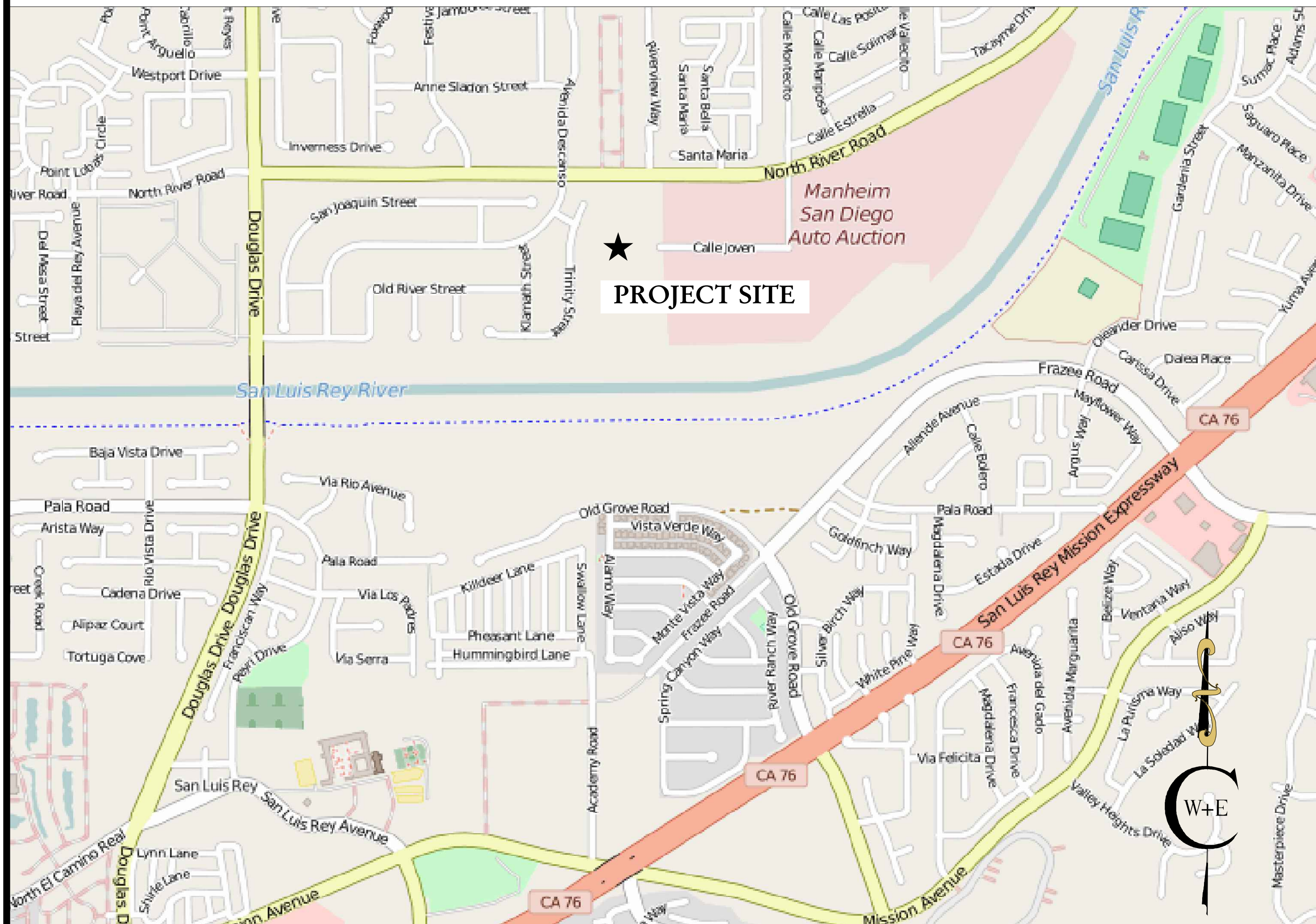
Although no plans are available, we understand that it is proposed to raze the existing structures and other improvements on the land and redevelop the property with multiple residential units. The residential units may consist of single-family homes, townhomes, and or multi-family dwellings. The buildings are expected to be two- and/or three-story, wood frame structures with conventional foundations and slab-on-grade floors. Additional improvements will include typical pavements, utilities, and other light miscellaneous exterior improvements.

To assist with the preparation of this report, we have reviewed the information for a previous geotechnical investigation performed by our firm at the project site. The subsurface exploration information and laboratory test results from that previous investigation are included in this report as Appendix B.

This report has been prepared for the exclusive use of Nagata Brothers Farms, Inc. and its consultants for specific application to the project described herein. Should the project be modified, the conclusions and recommendations presented in this report should be reviewed by Christian Wheeler Engineering for conformance with our recommendations and to determine whether any additional subsurface investigation, laboratory testing and/or recommendations are necessary. Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, expressed or implied.

SITE VICINITY

© OpenStreetMap contributors



NAGATA PROPERTY 4617 NORTH RIVER ROAD OCEANSIDE, CALIFORNIA		CHRISTIAN WHEELER ENGINEERING
DATE: DECEMBER 2015	JOB NO.: 2140692	
BY: SRD	FIGURE NO.: 1	

PROJECT SCOPE

Our preliminary geotechnical investigation consisted of surface reconnaissance, subsurface exploration, review of previous subsurface explorations and laboratory testing by our firm, analysis of the field data, and review of relevant geologic literature. Our scope of service did not include assessment of hazardous substance contamination, recommendations to prevent floor slab moisture intrusion or the formation of mold within the structure, or any other services not specifically described in the scope of services presented below. More specifically, our intent was to provide the services listed below.

- Explore the subsurface conditions of the site to the depths influenced by the proposed construction.
- Evaluate, by laboratory tests and our past experience with similar soil types, the engineering properties of the various soil strata that may influence the proposed construction, including bearing capacities, expansive characteristics and settlement potential.
- Describe the general geology at the site, including possible geologic hazards that could have an effect on the proposed construction, and provide the seismic design parameters as required by the 2013 edition of the California Building Code.
- Address potential construction difficulties that may be encountered due to soil conditions, groundwater or geologic hazards, and provide recommendations concerning these problems.
- Address the potential for soil liquefaction at the site.
- Provide site preparation and grading recommendations for the anticipated work.
- Provide foundation recommendations for the type of construction anticipated and develop soil engineering design criteria for the recommended foundation designs.
- Provide design parameters for restrained and unrestrained retaining walls.
- Provide preliminary pavement sections.
- Prepare this report, which includes, in addition to our conclusions and recommendations, a plot plan showing the areal extent of the geological units and the locations of our exploratory borings, exploration logs, and a summary of the laboratory test results.

Although tests were previously performed to categorize the potential corrosivity of the on-site the soils that may be in contact with below grade structures, it should be understood Christian Wheeler Engineering does not practice corrosion engineering. If such an analysis is considered necessary, we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter. The results of these tests should only be used as a guideline to determine if additional testing and analysis is necessary.

FINDINGS

SITE DESCRIPTION

The subject site is a rectangular, 16.6-acre parcel of land located about 3,000 feet east of Douglas Drive, between North River Road, which bounds the site on the north, and the San Luis Rey River, which bounds the site on the south. The property is identified by the address of 4617 North River Road and by Assessor's Parcel Number 157-060-17. The site is predominantly undeveloped, but does support a single-family residence, an old warehouse, a packing shed, small out buildings, and an abundant amount of old farm equipment and miscellaneous materials and machinery. The property is relatively level and is about 20 feet above the improved channel for the San Luis Rey River. A grouted rip-rap embankment separates the property from the channel bottom.

GENERAL GEOLOGY AND SUBSURFACE CONDITIONS

GEOLOGIC SETTING AND SOIL DESCRIPTION: The subject site is located within the Coastal Physiographic Province of San Diego County. Based on our subsurface explorations and analysis of readily available, pertinent geologic literature, the areas of the site investigated were found to be underlain by artificial fill, alluvium, and old paralic deposits. Each of these units is discussed below in order of increasing age:

> **ARTIFICIAL FILL (Qaf):** Seven of our nine borings encountered artificial fill material that was most likely placed during a leveling operation for the farmland (B-1, B-2, B-3, B-6, B-7, B-8 and B-9). The fill material was noted to range from 1 foot to 3½ feet in thickness and consisted of dry to damp, relatively loose, silty sand (SM). Some of the fill material contained debris and trash that will need to be removed by hand-picking during the grading operation. The fill material is expected to have a "low" to "very low" Expansion Index, low strength parameters, and a moderate settlement potential. Based on the relatively loose condition of the existing fill, it will need to be removed and replaced as properly compacted fill as part of the remedial grading operation.
>
> **TOPSOIL:** An approximately 1- to 2-foot-thick layer of natural topsoil was noted within all but one of our exploratory borings. The topsoil generally consisted of fine-grained, silty sand (SM) that was dry to moist and loose to medium dense in consistency. The topsoil is expected to possess a "low" Expansion Index, low strength parameters, and a moderate settlement potential. Based on the relatively loose condition of the existing topsoil, it will need to be removed and replaced as properly compacted fill as part of the remedial grading operation.

ALLUVIUM (Qal): Quaternary-age alluvial deposits were encountered below the topsoil and/or fill layers within each of exploratory borings and cone penetration tests. The alluvial materials were encountered at depths of 2 to 4 feet below the existing site grades and were noted to extend to depths greater than the maximum explored depth of 60 feet below existing site grades. The alluvial deposits generally consisted of poorly-graded sand (SP) and silty sand – poorly-graded sand (SM-SP) with lesser amounts of silty sand (SM), silty sand – sandy silt (SM-ML), and poorly-graded sand (SP). The exposed alluvium was typically damp to moist to depths of about 15 feet below the existing grades, very moist to wet within a few feet of the water table, and saturated below the water table (described in the following section).

GROUNDWATER: Groundwater was encountered in our previous borings (drilled June 14, 2005) at depths ranging from about 18 to 24 feet below the existing site grades. Pore Pressure Dissipation tests performed during the cone penetration testing measured the water table at depths ranging from 23 to 26½ feet below the existing grades. It should be noted that variations in subsurface water (including perched water zones and seepage) may result from fluctuations in the ground surface topography, subsurface stratification, precipitation, irrigation, and other factors that may not have been evident at the time of the investigation. It should also be recognized that minor groundwater seepage problems might occur after development of a site even where none were present before development. These are usually minor phenomena and are often the result of an alteration in drainage patterns and/or an increase in irrigation water. It is further our opinion that these problems can be most effectively corrected on an individual basis if and when they occur.

TECTONIC SETTING: No active or potentially active faults are known to traverse the subject site. However, it should be noted that much of Southern California, including the San Diego County area, is characterized by a series of Quaternary-age fault zones that consist of several individual, en echelon faults that generally strike in a northerly to northwesterly direction. Some of these fault zones (and the individual faults within the zone) are classified as "active" according to the criteria of the California Division of Mines and Geology. Active fault zones are those that have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years). The Division of Mines and Geology used the term "potentially active" on Earthquake Fault Zone maps until 1988 to refer to all Quaternary-age (last 1.6 million years) faults for the purpose of evaluation for possible zonation in accordance with the Alquist-Priolo Earthquake Fault Zoning Act and identified all Quaternary-age faults as "potentially active" except for certain faults that were presumed to be inactive based on direct geologic evidence of inactivity during all of Holocene time or longer. Some faults considered to be "potentially active" would be considered to be "active" but lack specific criteria used by the State Geologist, such as *sufficiently active* and *well-defined*. Faults older than Quaternary-age are not specifically defined in Special Publication 42, Fault Rupture Hazard Zones in California, published by the

California Division of Mines and Geology. However, it is generally accepted that faults showing no movement during the Quaternary period may be considered to be “inactive”.

A review of available geologic maps indicates that a portion of the Newport-Inglewood Fault Zone is located approximately 14 kilometers west of the site. In addition to the Newport-Inglewood Fault Zone, other active fault zones in the region that could possibly affect the site include the Palos Verdes Fault Zone to the northwest, the Rose Canyon and Coronado Bank Fault Zones to the southwest, and the Elsinore, Earthquake Valley, and San Jacinto Fault Zones to the east. The following Table I presents the proximal faults that are anticipated to most significantly contribute to the ground-motion hazard at the site.

TABLE I: PROXIMAL FAULT ZONES

Fault Zone	Distance
Newport-Inglewood	14 km
Rose Canyon	16 km
Elsinore-Julian	31 km
Coronado Bank	42 km
Palos Verdes	59 km
San Jacinto (Anza)	66 km
Earthquake Valley	68 km

GEOLOGIC HAZARDS

SEISMIC HAZARD: A likely geologic hazard to affect the site is ground shaking as a result of movement along one of the major active fault zones mentioned in the “Tectonic Setting” section of this report. Per Chapter 16 of the 2013 California Building Code (CBC), the Risk-Targeted Maximum Considered Earthquake (MCE_R) ground acceleration is that which results in the largest maximum response to horizontal ground motions with adjustments for a targeted risk of structural collapse equal to one percent in 50 years. Figures 1613..3.1(1) and 1613.3.1(2) of the CBC present MCE_R accelerations for short (0.2 sec.) and long (1.0 sec.) periods, respectively, based on a soil Site Class B (CBC 1613.3.2) and a structural damping of five percent. For the subject site, correlation with estimated blow counts indicates that the upper 100 feet of geologic subgrade can be characterized as Site Class D. In this case, the mapped MCE_R accelerations are modified using the Site Coefficients presented in Tables 1613.3.3(1) and (2). The modified MCE spectral accelerations are then multiplied by two-thirds in order to obtain the design spectral accelerations. These seismic design parameters for the subject site (33.2377°, -117.3095°), based on Chapter 16 of the CBC, are presented in Table II below.

TABLE II: CBC 2013 EDITION – SEISMIC DESIGN PARAMETERS

CBC – Chapter 16 Section	Seismic Design Parameter	Recommended Value
Section 1613.3.2	Soil Site Class	D
Figure 1613.3.1 (1)	MCE_R Acceleration for Short Periods (0.2 sec), S_s	1.058 g
Figure 1613.3.1 (2)	MCE_R Acceleration for 1.0 Sec Periods (1.0 sec), S_1	0.413 g
Table 1613.3.3 (1)	Site Coefficient, F_a	1.077
Table 1613.3.3 (2)	Site Coefficient, F_v	1.587
Section 1613.3.3	S_{MS} = MCE_R Spectral Response at 0.2 sec. = $(S_s)(F_a)$	1.140 g
Section 1613.3.3	S_{M1} = MCE_R Spectral Response at 1.0 sec. = $(S_1)(F_v)$	0.656 g
Section 1613.3.4	S_{DS} = Design Spectral Response at 0.2 sec. = $2/3(S_{MS})$	0.760 g
Section 1613.3.4	S_{D1} = Design Spectral Response at 1.0 sec. = $2/3(S_{M1})$	0.437 g
Section 1803.2.12	PGA_M per Section 11.8.3 of ASCE 7	0.44 g

It can be noted that sites underlain by liquefaction-susceptible soils should be designated as site class F, requiring a dynamic site response analysis. However, as discussed in Section 20.3.1 of ASCE Standard 7 "Minimum Design Loads for Buildings and Other Structures", for structures having fundamental periods of vibration equal to or less than 0.5 second, it is not required to perform a dynamic site response analysis. We expect that the proposed structure will have a fundamental period less than 0.5 second and can therefore be designed using soil Site Class D as described previously.

LANDSLIDE POTENTIAL AND SLOPE STABILITY: As part of this investigation we reviewed the publication, "Landslide Hazards in the Southern Part of the San Diego Metropolitan Area" by Tan, 1995. This reference is a comprehensive study that classifies San Diego County into areas of relative landslide susceptibility. According to this publication, the site is mapped within Relative Landslide Susceptibility Area 2, which is considered to be "marginally susceptible" to landsliding. Based on our findings, it is our professional opinion that the potential for slope failures within the site is very low.

FLOODING: As delineated on Flood Insurance Rate Map (FIRM) 06073C1611G prepared by the Federal Emergency Management Agency, the site is located within Zone X, which has a 0.2% annual chance to be affected by a flood hazard.

TSUNAMIS: Tsunamis are great sea waves produced by submarine earthquakes or volcanic eruptions. The risk potential for damage to the subject site caused by tsunamis is very low.

SEICHES: Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays or reservoirs. The risk potential for damage to the subject site caused by seiches is very low.

LIQUEFACTION

GENERAL: The subject site is in an area considered susceptible to liquefaction. In order to be subject to liquefaction, three conditions must be present: loose sandy or cohesionless silty deposits, shallow groundwater, and earthquake shaking of sufficient magnitude and duration. Based on our site-specific study, it appears that shallow groundwater is present at the site and strong earthquake shaking may affect the site. Additionally, as described in the Geologic Setting and Soil Description section of this report above, the materials below the shallow water table in the project area consist of Quaternary-age alluvium that contains layers of sand, silty sand, and low to medium plasticity silts that are expected to have soil properties conducive to liquefaction.

It should be noted that the following discussion is in no way a guarantee that the analysis will accurately predict the liquefaction potential at the site. The analysis provides general information only on the site liquefaction potential. It should be noted that many of the parameters used in liquefaction evaluations are subjective and open to interpretation, and that much is yet unknown about both the seismicity of the San Diego area and the phenomenon of liquefaction.

DESCRIPTION OF ANALYSIS: Our analysis was performed using the Cliq (version 1.7) software developed by Geologismiki, in which the cone penetration test results were input and evaluated in accordance with the procedure recommended by the National Center For Earthquake Engineering Research (NCEER, 1998). Our analyses were limited to the upper 50 feet of soils as liquefaction below that depth is not considered to have a significant effect on surface improvements.

EARTHQUAKE PARAMETERS: As permitted in Section 1803.5.12 of the California Building Code, our calculations were performed using a peak ground acceleration (PGA_M = 0.44g) as determined using the procedures set forth in Section 11.8.3 of ASCE 7-10. We have also performed a seismic hazard deaggregation using the interactive program available on the U. S. Geological Survey website. Within the USGS program, the site coordinates were entered and a deaggregation was performed based on the peak ground acceleration with one percent probability of exceedance in 50 years (0.45g) for soil with Vs^{30} = 200 m/s (Soil Site Class D). For the subject site, this yielded a mean earthquake magnitude of 6.4, which was used in our analysis.

POTENTIAL FOR LIQUEFACTION: Using the parameters described above, the results of our liquefaction analyses indicate that much of the saturated sandy and silty portions of the alluvium within the upper approximately 50 feet possess factors-of-safety against soil liquefaction of less than 1.3 and are therefore considered liquefiable.

POST LIQUEFACTION RECONSOLIDATION SETTLEMENT: The potential amount of total vertical settlement due to reconsolidation of the liquefied soils was estimated within the Cliq software using the methods presented by Zhang et al, 2002. The estimated settlements for our six cone penetration tests ranged from approximately 6½ to 10½ inches and averaged 8½ inches. It can be noted that, for sites with relatively small lateral displacement (i.e. less than one foot), predicted settlements are typically within a factor of two relative to those observed (Seed et al, 2003).

In terms of differential settlement, CGS Special Publication 117 notes that considerable difficulty exists in trying to "reliably estimate" the amount of differential settlement at a site caused by soil liquefaction. As such, a conservative estimate of differential settlement at any given site can be assumed to be two-thirds of the total liquefaction-induced settlement (CGS, 2008). Using this criterion, without any deep ground modification procedures, the subject project area may be assumed to be subject to approximately 5½ inches of liquefaction-induced, differential settlement.

LATERAL SPREADING: Lateral ground spreading can occur when viscous liquefied soils flow downslope, usually towards a river channel or shoreline. As presented in the referenced Conetec literature (2002), which was based on the work of Robertson and Wride (1998) and Zhang, Robertson and Brachman (2002) and which describes the use of the CPT method to estimate cyclic resistance ratios and liquefaction-induced soil deformation:

> "The equivalent clean sand normalized tip resistance $(Q_{tn})_{cs}$ can also be used as an estimate for possible flow liquefaction (Yoshimine et al., 1999). Based on the soil behavior index, the normalized tip resistance can be adjusted to account for the influence of fines (Robertson and Wride, 1998). The resulting value is the clean sand equivalent normalized tip resistance $(Q_{tn})_{cs}$. Yoshimine et al., (1999) showed that soils with a minimum undrained shear strength less than 0.1 had a tendency to be very brittle. They also showed that soils with an equivalent clean sand normalized CPT tip resistance of 50 had an undrained shear strength ratio in simple shear loading of around 0.1. Hence, Yoshimine et al. (1999) suggested that soils with an equivalent clean sand normalized CPT tip resistance less than 50 could be strain softening in simple shear loading and could also be very brittle. For flow liquefaction failure (i.e. flow slide) to occur requires a trigger event and a sufficient volume of strain softening soils where the resulting minimum undrained shear strength is less than the insitu static shear stress. The profiles of $(Q_{tn})_{cs}$ should be reviewed carefully to identify either large volumes or continuous layers of soils with values less than 50."

Based on this criteria for identifying potentially strain softening soil layers, we have reviewed the clean sand equivalent normalized tip resistance values $(Q_{tn})_{cs}$ of the soil layers encountered in the recently conducted CPT soundings. Only minor volumes and discontinuous layers of soils with $(Q_{tn})_{cs}$ values of less than 50 were noted in our review.

Factors such as the absence of significant volumes of potentially stain softening ($(Q_{tn})_{cs} <50$) liquefiable soils beneath the site and the relatively gentle hydraulic gradient of the water table across the area are considered favorable with regards to limiting potential lateral spreading. However, based on the areal extent of materials around the area of the project site that are anticipated to be liquefiable and the location of the site in proximity to the San Luis Rey River valley, lateral earth displacements on the order a few inches across the general area of the proposed development could be expected in the event of major, proximal seismic event that triggers soil liquefaction. Measures to mitigate the potential for lateral spreading across the area of the subject site would likely require deep ground modification and improvement techniques not just at the subject site but rather across the majority of the San Luis Rey River area. Given the unlikelihood of such a large-scale ground improvement project across the region, our foundation recommendations contained herein have been given to provide a life-safety performance level for the proposed structures. Our recommendations do not, however, preclude the possibility of structural damage and horizontal displacement of the proposed structures and improvements occurring, even to the extent that they become unusable or uninhabitable, as a result of a major seismic event.

CONCLUSIONS

In general, our findings indicate that, from a geologic and geotechnical perspective, the subject property is suitable for the proposed residential development provided the recommendations presented herein are implemented. The main geotechnical and geologic conditions that will impact the proposed construction are the presence of deep alluvial soils that are subject to liquefaction during a major seismic event and surficial topsoil and fill soils that are potentially compressible under additional loads.

We have estimated that the site may be subject to post-liquefaction reconsolidation settlement on the order of 10 inches in the event of a major, proximal seismic event. Though alternative remediation options exist, it is our opinion that a successful ground improvement/ reinforcement program can be the most efficient way to simultaneously reduce the liquefaction potential and improve the bearing characteristics of the existing soils. Stone columns are the considered the most appropriate ground improvement method at this time. Stone columns, also known as Vibro Replacement, consist of columns of crushed aggregate that are installed in a grid pattern using a vibrating downhole probe to densify the surrounding cohesionless soils while filling the void with the crushed aggregate to provide stiff reinforcing elements within the looser matrix soils. Given their unique application, stone columns are typically designed and constructed by a specialty contractor that will use the subsurface data presented in this report and the structural building requirements to prepare the design. Good engineering practice requires that where the evaluation indicates that liquefaction is likely (or reasonably possible), the hazards that might reasonably be caused by liquefaction, that could result in the collapse of a structure and/or loss of life be mitigated. In our opinion, this level of life safety can be achieved by reducing the estimated post-liquefaction reconsolidation settlement to 4 inches or less. The client should realize that the site preparation and foundation recommendations presented herein are intended to provide this level of life safety. These recommendations, however, will not necessarily prevent the structures from sustaining damage, even to the extent that they may become uninhabitable. They will also not prevent damage to streets or other surface improvements as well as underground utilities.

In addition to the ground improvement for liquefaction mitigation, it will also be necessary to perform remedial grading for areas to support new fill and/or settlement-sensitive improvements. In general, this will include overexcavating the existing soils to depths ranging from 3 to 5 feet below the existing grade and replacing the material as properly compacted, structural fill.

RECOMMENDATIONS

GRADING AND EARTHWORK

GENERAL: All grading should conform to the guidelines presented in Appendix J of the California Building Code, the minimum requirements of the City of Oceanside, and the recommended Grading Specifications and Special Provisions attached hereto, except where specifically superseded in the text of this report. Prior to grading, a representative of Christian Wheeler Engineering should be present at the pre-construction meeting to provide additional grading guidelines, if necessary, and to review the earthwork schedule.

OBSERVATION OF GRADING: Continuous observation by the Geotechnical Consultant is essential during the grading operation to confirm conditions anticipated by our investigation, to allow adjustments in design criteria to reflect actual field conditions exposed, and to determine that the grading proceeds in general accordance with the recommendations contained herein.

CLEARING AND GRUBBING: Site grading should begin with the removal of the existing improvements, including foundations, utilities, concrete and all vegetation and miscellaneous debris from the portions of site that will be graded and/or will receive improvements. Existing on-site wells should be abandoned in accordance with

County of San Diego, Department of Environmental Health guidelines. It is unknown if there are underground utility lines within the subject proper. Any abandoned underground pipes found during the grading operation should be removed and the resulting depressions backfilled with uniformly compacted fill material. The materials resulting from clearing and grubbing should be disposed of off-site. **It should be noted that discing of the vegetation into the surficial soils is not an acceptable form of removal, and could result in the requirement that all soil contaminated with vegetation be exported from the site.**

SITE PREPARATION: The following recommendations are based on the assumption that all existing site materials are suitable for reuse on the site and are not considered contaminated or otherwise are unsuitable. As discussed in the "Liquefaction Mitigation – Stone Columns" section of this report, we expect that stone columns will be installed below the planned structures. After stone column installation, site preparation in the building pad areas should consist of overexcavating the existing soils within the upper three feet of the stone columns and replacing them as properly compacted structural fill. This overexcavation should extend horizontally a distance of at least three feet outside the perimeter of the stone column grid.

In the remaining areas of the site, we recommend that the site preparation consist of overexcavating the existing surficial fill soils and replacing them as properly compacted, structural fill. Based on the results of our subsurface explorations, we expect that the required overexcavation depth will typically be about 5 feet below the existing ground surface. Horizontally, we recommend that the overexcavation extend at least five feet outside areas to receive fill and/or settlement-sensitive improvements or to the property line, whichever distance is less.

The Geotechnical Consultant should observe the overexcavation operations and the base of removal areas prior to either filling or the construction of improvements. If soft or otherwise unsuitable soils are exposed at the removal bottom, it might be necessary to perform additional excavation or to stabilize the bottom. Specific recommendations will need to be made on a case-by-case basis.

PROCESSING OF FILL AREAS: Prior to placing any new fill soils or constructing any new improvements in areas that have been cleaned out and approved to receive fill, the exposed soils should be scarified to a depth of 12 inches, moisture-conditioned, and compacted to at least 90 percent relative compaction. If soft, pumping, or otherwise unsuitable soils are exposed at the removal bottom that cannot be properly compacted, it will be necessary to stabilize the bottom soils prior to placing structural fill.

EXCAVATION CHRACTERISTICS: Based on our exploratory excavations, the subsurface materials at the site appear to be excavatable to the anticipated excavation depths with conventional heavy-duty earthmoving equipment in good operating condition. Significant caving of the exploratory excavations was not encountered at the time of our subsurface explorations. However, due to the locally loose condition of the existing shallow materials encountered in our exploratory excavations, it should be expected that excavations in the fill and alluvial materials could experience localized caving and sloughing. Additionally, soft or spongy soils may be encountered that will necessitate lightweight equipment and/or top-loading with an excavator.

IMPORTED FILL MATERIAL: Soils to be imported to the site should be evaluated and approved by the Geotechnical Consultant prior to being imported. At least five working days-notice of a potential import source should be given to the Geotechnical Consultant so that appropriate testing can be accomplished. The type of material considered most desirable for import is granular material containing some silt or clay binder, which has an Expansion Index of less than 50. Less than 25 percent of the material should be larger than the Standard #4 sieve, and less than 25 percent finer than the Standard # 200 sieve. Soils not meeting there criteria should not be used for structural fill or backfill.

COMPACTION AND METHOD OF FILLING: All structural fill and backfill material placed at the site should be compacted to a relative compaction of at least 90 percent of maximum dry density as determined by ASTM Laboratory Test D1557. Fills should be placed at a moisture content that is two to four percent above optimum moisture content, in lifts six to eight inches thick, with each lift compacted by mechanical means. Fills should consist of approved earth material, free of trash or debris, roots, vegetation, or other materials determined to be unsuitable by our soil technicians or project geologist. Fill material should be free of rocks or lumps of soil in excess of twelve inches in maximum dimension; however, this should be reduced to six inches within four feet of finish grade.

All utility trench backfill should be compacted to a minimum of 90 percent of its maximum dry density. The upper twelve inches of subgrade beneath paved areas should be compacted to 95 percent of the materials maximum dry density. This compaction should be obtained by the paving contractor just prior to placing the aggregate base material and should not be part of the mass grading requirements or operation.

TEMPORARY CUT SLOPES: The contractor is solely responsible for designing and constructing stable, temporary excavations and will need to shore, slope, or bench the sides of trench excavations as required to maintain the stability of the excavation sides. The contractor's "competent person", as defined in the OSHA Construction Standards for Excavations, 29 CFR, Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety process. We anticipate that the existing on-site soils will consist of Type C material. Our firm should be contacted to observe all temporary cut slopes during grading to ascertain that no unforeseen adverse conditions exist. No surcharge loads such as foundation loads, or soil or equipment stockpiles, vehicles, etc. should be allowed within a distance from the top of temporary slopes equal to half the slope height.

SURFACE DRAINAGE: The ground around the proposed structure should be graded so that surface water flows rapidly away from the structure without ponding. In general, we recommend that the ground adjacent to structure slope away at a gradient of at least two percent. Densely vegetated areas where runoff can be impaired should have a minimum gradient of five percent within the first five feet from the structure. Rain gutters with downspouts that discharge runoff away from the structure into controlled drainage devices are also recommended. It is our opinion that storm water systems incorporating infiltration are not appropriate for the site due to the potential for hydro-consolidation of the site soils.

GRADING PLAN REVIEW: The final grading plans should be submitted to this office for review in order to ascertain that the geotechnical recommendations remain applicable to the final plan and that no additional recommendations are needed due to changes in the anticipated development. Our firm should be notified of changes to the proposed project that could necessitate revisions of or additions to the information contained herein.

LIQUEFACTION MITIGATION - STONE COLUMNS

As discussed previously, the subject site is underlain by soils that are potentially liquefiable under the design seismic ground motion. This will require that steps be taken to reduce the potential liquefaction-related total and differential building settlement to an amount that satisfies the minimum life-safety criteria and project requirements. Though it is possible to reduce the settlements using special foundation design, it is our opinion that the most appropriate option to mitigate the potential for liquefaction settlement is to perform ground improvement. Several ground improvement techniques are available; however, it appears that stone columns will likely be the most effective given the predominant soil types and the project conditions. Stone columns densify loose cohesionless soils by inserting of a vibrating probe into the ground and then building a column of crushed aggregate that is also compacted using the vibrating probe. For this type of system, it is customary for a specialty contractor to provide the design, including specific equipment and procedural specifications. The design should be developed by the specialty contractor using the information presented in this geotechnical report combined with the loading and settlement requirements of the planned structures. As a minimum, we recommend that the stone columns extend at least one row outside the perimeter of the buildings or to the project boundary, whichever distance is less.

Good engineering practice requires that where the evaluation indicates that liquefaction is likely (or reasonably possible), the hazards that might reasonably be caused by liquefaction, that could result in the collapse of a structure and/or loss of life be mitigated. For shallow foundation systems supporting low-rise structures, it is our opinion that this level of life safety can be achieved by reducing the estimated post-liquefaction reconsolidation settlement to 4 inches or less. As such, we recommend that the design and construction of stone columns be performed to achieve a post-liquefaction reconsolidation settlement of 4 inches or less.

We recommend that the stone columns be observed during installation and that post-installation Cone Penetration Testing (CPT) be performed to quantify the degree of improvement achieved. Prior to construction, the stone column contractor should provide a submittal describing the design and outlining the planned installation procedure, including intended installation methods, equipment, penetration depths, rock type and volumes, and the required amperage. During installation, the contractor should provide means to measure, for each column, the penetration depth and rock volume placed and to verify the amperage achieved. After installation, post-CPTs will be performed in areas representing the average condition of the improved soil to measure the increased tip resistances and to re-evaluate the liquefaction settlement potential based on the achieved values. The liquefaction potential and corresponding settlement will be evaluated for the matrix soil using the same parameters that were used in the original evaluation except that the calculated settlement in the treated zone will be reduced by an improvement factor to account for the stiffness of the in-place rock columns. As shown by Priebe (1998), improvement factors of 1.3, 1.4, and 1.5 are applicable for area replacement ratios of 8½ percent, 11 percent, and 14½ percent, respectively. The applied improvement factor will be determined based on the average replacement ratio achieved in the grid area tested. Acceptance will be based on the total liquefaction settlement calculated from the post-CPTs and the equivalent differential settlement given the performance criteria described above.

FOUNDATIONS

GENERAL: The following design recommendations are considered the minimum based on anticipated soil conditions and are not intended to be lieu of structural considerations. All foundations should be designed by a qualified structural engineer.

POST-TENSION FOUNDATIONS: It is our opinion that post-tensioned slab/foundation systems should be used to support the proposed residential structures. Post-tensioned slabs should be designed in accordance with the design procedures of the Post-Tension Institute, using the design criteria presented below in Table

III. We recommend that perimeter footings have a minimum embedment depth of 18 inches below the adjacent finish grade.

TABLE III: POST-TENSION DESIGN CRITERIA

Post-Tensioning Institute (PTI) – 3rd Edition	**Design Value**
Edge Moisture Variation, e_m	
Center Lift (ft)	9.0
Edge Lift (ft)	4.9
Differential Soil Movement, y_m	
Center Lift (in)	0.66
Edge Lift (in)	1.58

OTHER FOOTINGS: Retaining wall footings should have a minimum embedment depth of 18 inches below the lowest adjacent grade and should have a minimum width of 24 inches. Footings for miscellaneous exterior structures such as trash enclosures should have a minimum embedment depth of 12 inches below the lowest adjacent grade and a minimum width of 12 inches.

BEARING CAPACITY: Footings with a minimum embedment depth and width of 12 inches may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf) for dead plus live loads. This value may be increased by 300 psf for each additional foot of embedment depth or width, up to a maximum of 4,000 psf. The bearing value may also be increased by one-third for combinations of temporary loads such as those due to wind or seismic loads.

LATERAL LOAD RESISTANCE: Lateral loads against foundations may be resisted by friction between the bottom of the footing and the supporting soil, and by the passive pressure against the footing. The coefficient of friction between concrete and soil may be considered to be 0.35. The passive resistance may be considered to be equal to an equivalent fluid weight of 350 pounds per cubic foot. These values are based on the assumption that the footings are poured tight against undisturbed soil. If a combination of the passive pressure and friction is used, the friction value should be reduced by one-third.

SETTLEMENT CHARACTERISTICS: The anticipated total and differential foundation settlement for the static condition is expected to be less than one inch and ¾ inch in forty feet, respectively, provided the recommendations presented in this report are followed. It should be recognized that minor cracks normally occur in concrete slabs and foundations due to shrinkage during curing or redistribution of stresses, therefore some cracks should be anticipated. Such cracks are not necessarily an indication of excessive vertical movements.

Provided ground improvement is performed as discussed above, the expected total liquefaction settlement is on the order of 4 inches. Based on the presence of a 20- to 25-foot-thick layer of non-liquefiable soil below the buildings and the use of post-tension foundation systems, the expected differential liquefaction settlement is less than 2 inches across the width of the building. It is our opinion that this magnitude of total and differential liquefaction settlement will not result in the collapse of the structure or incur the loss of life; however, it does present the possibility of structural damage and the need to repair or replace the structure.

EXPANSIVE CHARACTERISTICS: The foundation soils are expected to have a "low" expansion index. The site preparation and foundation recommendations reflect this condition.

FOUNDATION PLAN REVIEW: The final foundation plan and accompanying details and notes should be submitted to this office for review. The intent of our review will be to verify that the plans used for construction reflect the minimum dimensioning and reinforcing criteria presented in this section and that no additional criteria are required due to changes in the foundation type or layout. It is not our intent to review structural plans, notes, details, or calculations to verify that the design engineer has correctly applied the geotechnical design values. It is the responsibility of the design engineer to properly design/specify the foundations and other structural elements based on the requirements of the structure and considering the information presented in this report.

FOUNDATION EXCAVATION OBSERVATION: All foundation excavations should be observed by the Geotechnical Consultant prior to placing reinforcing steel or formwork in order to determine if the foundation recommendations presented herein are followed. All footing excavations should be excavated neat, level, and square. All loose or unsuitable material should be removed prior to the placement of concrete.

CORROSIVITY

The water soluble sulfate content was determined for a representative soil sample from the site in accordance with California Test Method 417. The result, which is presented in Appendix B, indicates that the on-site soils are, in general, negligibly corrosive to concrete.

It should be understood Christian Wheeler Engineering does not practice corrosion engineering. If such an analysis is considered necessary, we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter. The results of our tests should only be used as a guideline to determine if additional testing and analysis is necessary.

ON-GRADE SLABS

INTERIOR SLAB: We expect that the design of floor systems of the proposed structure will be performed by others as part of the post-tension foundation design. The owner and the project structural engineer should determine if the on-grade slabs need to be designed for special loading conditions.

.

UNDER-SLAB VAPOR RETARDERS: Where floor coverings are installed, steps should be taken to minimize the transmission of moisture vapor from the subsoil through the interior slabs where it can potentially damage the interior floor coverings. We recommend that the owner/contractor follow national standards for the installation of vapor retarders below interior slabs as presented in currently published standards including ACI 302, "Guide to Concrete Floor and Slab Construction" and ASTM E1643, "Standard Practice for Installation of Water Vapor Retarder Used in Contact with Earth or Granular Fill Under Concrete Slabs".

EXTERIOR CONCRETE FLATWORK: Exterior concrete on-grade slabs should have a minimum thickness of four inches. Exterior slabs abutting perimeter foundations should be doweled into the footings. All slabs should be provided with weakened plane joints in accordance with the American Concrete Institute (ACI) guidelines. Alternative patterns consistent with ACI guidelines can also be used. A concrete mix with a 1-inch maximum aggregate size and a water/cement ratio of less than 0.6 is recommended for exterior slabs. Lower water content will decrease the potential for shrinkage cracks. Both coarse and fine aggregate should conform to the latest edition of the "Standard Specifications for Public Works Construction" ('Greenbook").

Special attention should be paid to the method of concrete curing to reduce the potential for excessive shrinkage and resultant random cracking. It should be recognized that minor cracks occur normally in concrete slabs due to shrinkage. Some shrinkage cracks should be expected and are not necessarily an indication of excessive movement or structural distress.

EARTH RETAINING WALLS

FOUNDATIONS: Foundations for retaining walls can be designed in accordance with the foundation recommendations previously presented.

ACTIVE PRESSURES: The active soil pressure for the design of unrestrained and restrained earth retaining structures with a level backfill surface may be assumed to be equivalent to the pressure of a fluid weighing 35 and 55 pounds per cubic foot, respectively. An additional 20 pounds per cubic foot should be added for 2:1 (H:V) sloping backfill. Thirty percent of any area surcharge placed adjacent to the retaining wall may be assumed to act as a uniform horizontal pressure against the wall. Where vehicles will be allowed within ten feet of the top of the retaining wall, a uniform horizontal pressure of 100 pounds per square foot should be added to the upper 10 feet of the retaining wall to account for the effects of adjacent traffic. If any other loads are anticipated, the Geotechnical Consultant should be contacted for the necessary increase in soil pressure. All values are based on a drained backfill condition.

If it is necessary to consider seismic pressure, it may be assumed to be equivalent to the pressure of a fluid weighing 13 pounds per cubic foot, but the pressure distribution should be inverted so that the highest value is at the top of the wall. This corresponds to an approximate pseudo-static acceleration (Kh) of 0.11 g.

PASSIVE PRESSURES: The passive pressure for the prevailing soil conditions may be considered to be 350 pounds per square foot per foot of depth for foundations in fill soil. This pressure may be increased one-third for seismic loading. The upper one foot of soil should be neglected where the footing is abutted by landscaping. The coefficient of friction for concrete to soil may be assumed to be 0.35 for the resistance to lateral movement. When combining frictional and passive resistance, the friction should be reduced by one-third.

WATERPROOFING AND SUBDRAINS: The project architect should provide (or coordinate) waterproofing details for the retaining walls. The design values presented above are based on a drained backfill condition and do not consider hydrostatic pressures. Unless hydrostatic pressures are incorporated into the design, the retaining wall designer should provide a subdrain detail. A typical retaining wall subdrain detail is presented as Plate No. 2 of this report. Additionally, outlets points for the retaining wall subdrains should be coordinated by the project civil engineer. For subterranean walls, it may be necessary to collect the subdrain water in sumps and then pump it to an appropriate outlet.

BACKFILL: All retaining wall backfill should be compacted to at least 90 percent relative compaction. It is anticipated that the on-site soils are suitable for use as backfill material provided the design parameters given herein are used in the wall design. Retaining walls should not be backfilled until the masonry/concrete has reached an adequate strength.

PRELIMINARY PAVEMENT SECTIONS

GENERAL: We expect that new pavement will be installed as part of the project. The following presents preliminary sections for asphalt concrete (AC) or Portland Cement Concrete (PCC) construction. The pavement sections provided in Table IV and Table VI should be considered preliminary and should be used for planning purposes only. Final pavement designs should be determined after R-value tests have been performed in the actual subgrade material in place after grading. Presuming the grading recommendations presented previously are followed, we estimate that the subgrade soils will have an R-Value of approximately 25. The Traffic Index and Traffic Categories shown below are assumed. The project client and/or civil engineer should determine whether these assumed values are appropriate for the traffic conditions.

ASPHALT CONCRETE: We expect that the drive aisles will primarily support passenger vehicles with heavily loaded vehicles such as garbage trucks and large moving vans on average about 5 times per day. The parking stalls are expected to support primarily passenger vehicles and occasional moving vans. The asphalt concrete pavement section was calculated using the Caltrans design method using an assumed Traffic Index of 6.0 for drive aisles and 4.5 for parking stalls.

TABLE IV: ASPHALT CONCRETE SECTIONS

Pavement Type	**Traffic Index**	**Pavement Thickness**	**Base Thickness**	**Base Material**	**Subgrade Compaction**
Asphalt Concrete					
Drive Aisles	6.0	3.0 in.	9.5 in.	CAB or Class II	95% in upper 12”
Parking Stalls	4.5	3.0 in.	5.0 in.	CAB or Class II	95% in upper 12”

Prior to placing the base material beneath asphalt concrete pavements, the subgrade soil should be scarified to a depth of 12 inches and compacted to at least 95 percent of its maximum dry density at a moisture content one to three percent above optimum.

The base material could consist of Crushed Aggregate Base (CAB) or Class II Aggregate Base. The Crushed Aggregate Base should conform to the requirements set forth in Section 200-2.2 of the Standard Specifications for Public Works Construction. The Class II Aggregate Base should conform to requirements set forth in Section 26-1.02A of the Standard Specifications for California Department of Transportation. Asphalt concrete should be placed in accordance with ‘Standard Specifications for Public Works Construction (Greenbook), Section 302-5. Asphalt concrete pavement should be compacted to at least 95 % of Hveem density.

CONCRETE PAVEMENTS: Portland cement concrete (PCC) pavement thickness can be determined from Table V. The PCC pavement section was determined in general accordance with the procedure recommended within the American Concrete Institute report ACI-330R-08 Guide for Design and Construction of Concrete Parking Lots using the parameters listed in Table IV. We recommend that the referenced ACI-330R Guide be used to determine the appropriate requirements for control joint configuration, reinforcing, and dowelling of the construction joints. Portland Cement Concrete pavement placed in front of trash enclosures should be reinforced with at least No. 4 bars placed at 12 inches on center each way.

TABLE V: CONCRETE PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of Subgrade Reaction, k	100 pci
Modulus of Rupture for Concrete, M_R	500 psi
Traffic Category (Main Driveways)	A (ADTT = 10)

ADTT = Average Daily Truck Traffic. Trucks defined as vehicles with at least six wheels.

Based on the design parameters summarized in Table V, the PCC pavements should have the minimum thicknesses shown in Table VI.

TABLE VI: MINIMUM CONCRETE PAVEMENT THICKNESS

Pavement Use	Thickness
Main Driveways/Aisles/Trash Enclosures	6.0 in
Parking Stalls	5.5 in

Prior to placing concrete pavement, the subgrade soils should be scarified to a depth of 12 inches and compacted to at least 95 percent of their maximum dry density at a moisture content one to three percent above optimum. Concrete pavement construction should comply with the requirements set forth in Sections 201-1.1.2 and 302-6 of the Standard Specifications for Public Works Construction (concrete Class 560-C-3250).

The outside edge of concrete slabs that will support wheel loads should have a thickened edge or integral curb. The thickened edge should be at least 2 inches thicker than the slab and should taper back to the recommended slab thickness 3 feet from the edge of the slab.

LIMITATIONS

REVIEW, OBSERVATION AND TESTING

The recommendations presented in this report are contingent upon our review of final plans and specifications. Such plans and specifications should be made available to the geotechnical engineer and engineering geologist so that they may review and verify their compliance with this report and with the California Building Code.

It is recommended that Christian Wheeler Engineering be retained to provide continuous soil engineering services during the earthwork operations. This is to verify compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

UNIFORMITY OF CONDITIONS

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and on the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations and/or cut and fill slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered in this report that may be encountered during site development should be brought to the attention of the geotechnical engineer so that he may make modifications if necessary.

CHANGE IN SCOPE

This office should be advised of any changes in the project scope or proposed site grading so that we may determine if the recommendations contained herein are appropriate. This should be verified in writing or modified by a written addendum.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Government Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations.

PROFESSIONAL STANDARD

In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the locations where our test pits, surveys, and explorations are made, and that our data, interpretations, and recommendations be based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

CLIENT'S RESPONSIBILITY

It is the client's responsibility, or its representatives, to ensure that the information and recommendations contained herein are brought to the attention of the structural engineer and architect for the project and incorporated into the project's plans and specifications. It is further their responsibility to take the necessary measures to insure that the contractor and his subcontractors carry out such recommendations during construction.

FIELD EXPLORATIONS

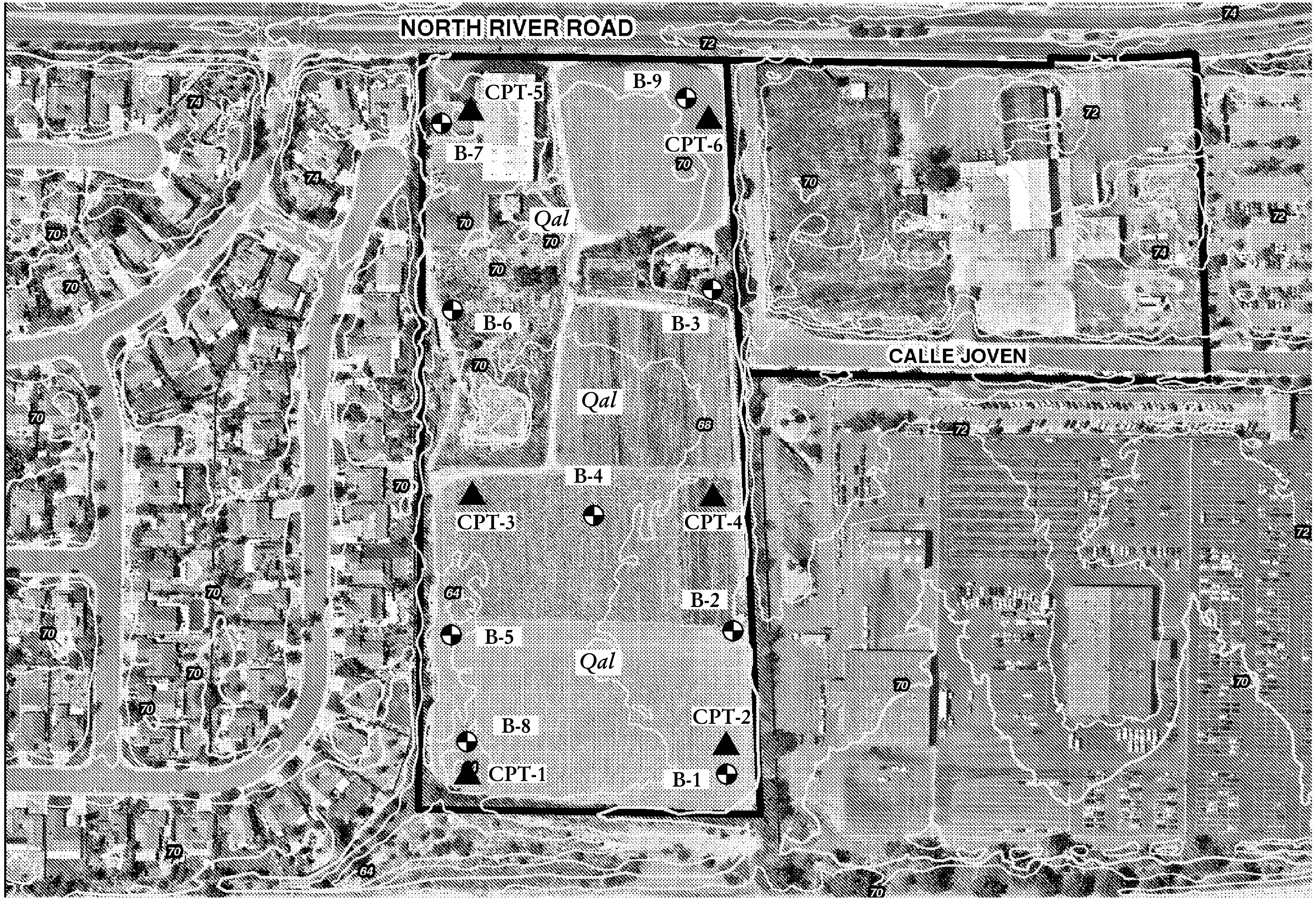
Fourteen subsurface explorations were made during this investigation at the locations indicated on the Site Plan included herewith as Plate Number 1. These explorations consisted of nine small-diameter, hollow-stem borings drilled with a truck-mounted drill rig between June 14 and July 11, 2005 and six Cone Penetration Tests conducted on October 7, 2015. The fieldwork was conducted under the observation and direction of our engineering geology personnel.

The CPT probes were performed by Kehoe Testing and Engineering, using an integrated electronic cone system. The results are presented in Appendix A. The CPT soundings were performed in accordance with ASTM Standard D3441. A thirty-ton capacity cone was used for all of the soundings. This cone had a tip area equal to 15 square centimeters and friction sleeve area of 225 square centimeters. The cone was designed with an equal end area friction sleeve and a tip end area ratio of 0.85. On the logs of the CPT soundings, the soils are described in terms of the Soil Behavior Type (SBT). The stratigraphic expression of the soil types, SBT, is based on the relationships between the measured cone bearing, sleeve friction, and penetration pore pressures measured almost continuously within each sounding.

The borings were carefully logged when made. The boring logs are presented in the attached Appendix B. The soils are described in accordance with the Unified Soils Classification. In addition, a verbal textural description, the wet color, the apparent moisture and the density or consistency are provided. The density of granular soils is given as either very loose, loose, medium dense, dense or very dense. The consistency of silts or clays is given as either very soft, soft, medium stiff, stiff, very stiff, or hard. Undisturbed samples of typical and representative soils were obtained and returned to the laboratory for testing. The undisturbed samples were obtained by driving a 2 ⅜-inch inside diameter split-tube sampler ahead of the auger using a 140-pound weight free-falling a distance of 30 inches. The number of blows required to drive the sampler each foot was recorded and this value is presented on the attached boring logs as "Penetration Resistance." Bulk samples of disturbed soil were also collected in bags from the auger cuttings during the advancement of the borings and transported to the laboratory for testing.

LABORATORY TESTING

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. The results are presented in Appendix B.



KAWANO-NAGATA

0 200' 400'

SCALE: 1" = 200'

TOPOGRAPHIC AERIAL MAP

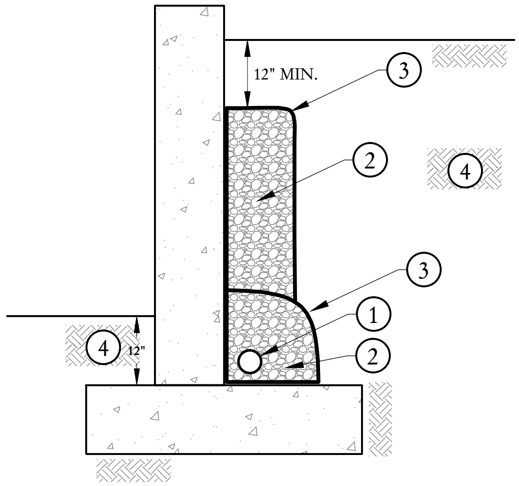
CWE LEGEND	
B-9	APPROXIMATE BORING LOCATION
CPT-6	APPROXIMATE CONE PENETROMETER TEST LOCATION
Qal	ALLUVIUM

SITE PLAN AND GEOTECHNICAL MAP

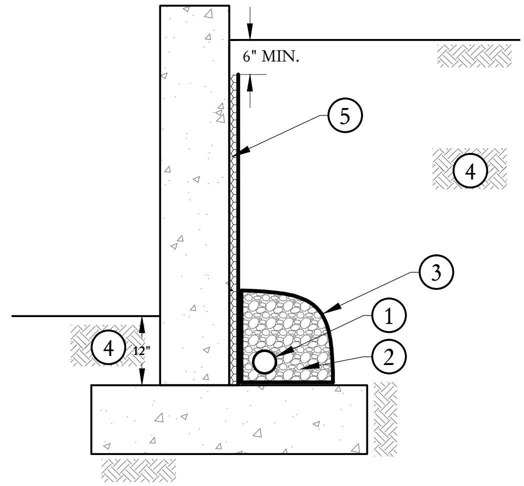
NAGATA PROPERTY
4617 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA

DATE:	DECEMBER 2015	JOB NO.:	2140692
BY:	SRD	PLATE NO.:	1

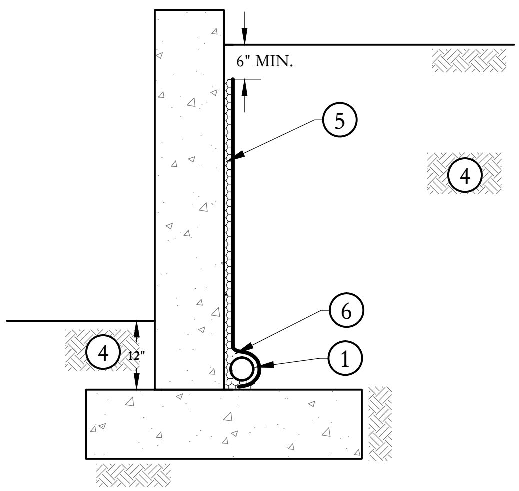
CHRISTIAN WHEELER ENGINEERING



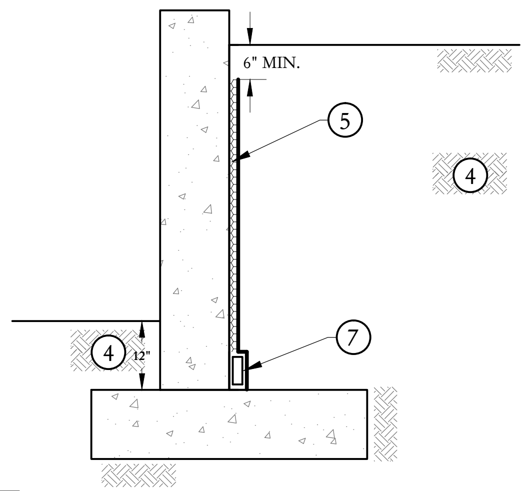
1 DETAIL



2 DETAIL



3 DETAIL



4 DETAIL

NOTES AND DETAILS

GENERAL NOTES:

1) THE NEED FOR WATERPROOFING SHOULD BE EVALUATED BY OTHERS.
2) WATERPROOFING TO BE DESIGNED BY OTHERS (CWE CAN PROVIDE A DESIGN IF REQUESTED).
3) EXTEND DRAIN TO SUITABLE DISCHARGE POINT PER CIVIL ENGINEER.
4) DO NOT CONNECT SURFACE DRAINS TO SUBDRAIN SYSTEM.

DETAILS:

1. 4-INCH PERFORATED PVC PIPE ON TOP OF FOOTING, HOLES POSITIONED DOWNWARD (SDR 35, SCHEDULE 40, OR EQUIVALENT).
2. ¾ INCH OPEN-GRADED CRUSHED AGGREGATE.
3. GEOFARBRIC WRAPPED COMPLETELY AROUND ROCK.
4. PROPERLY COMPACTED BACKFILL SOIL.
5. WALL DRAINAGE PANELS (MIRADRAIN OR EQUIVALENT) PLACED PER MANUFACTURER'S REC'S.
6. UNDERLAY SUBDRAIN WITH AND CUT FABRIC BACK FROM DRAINAGE PANELS AND WRAP FABRIC AROUND PIPE.
7. COLLECTION DRAIN (TOTAL DRAIN OR EQUIVALENT) LOCATED AT BASE OF WALL DRAINAGE PANEL PER MANUFACTURER'S RECOMMENDATIONS.

CANTILEVER RETAINING WALL DRAINAGE SYSTEMS

NAGATA PROPERTY
4617 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA

DATE:	DECEMBER 2015	JOB NO.:	2140692
BY:	SRD	PLATE NO.:	2

CHRISTIAN WHEELER
ENGINEERING

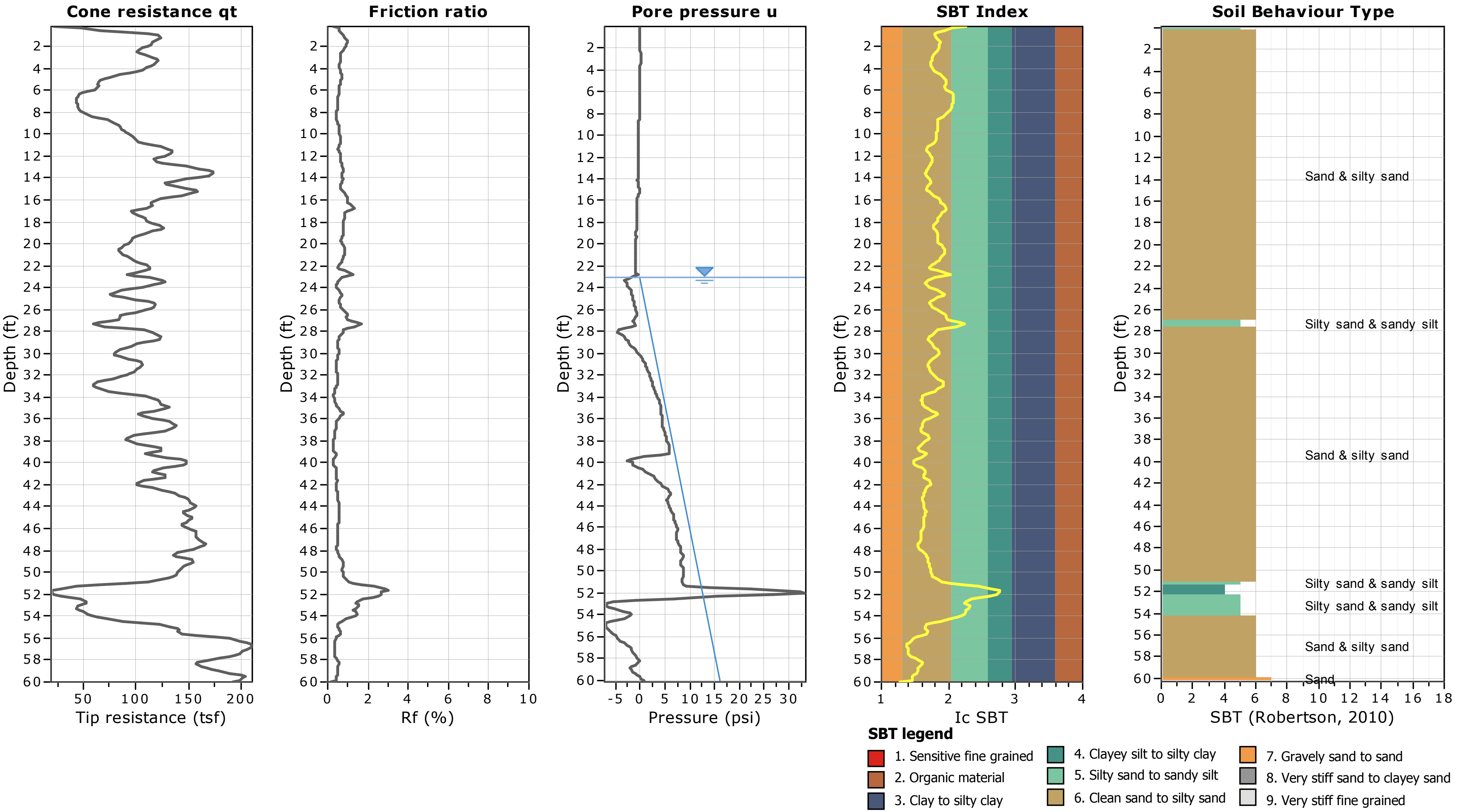
Appendix A

Cone Penetration Test Results

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-1
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 65.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

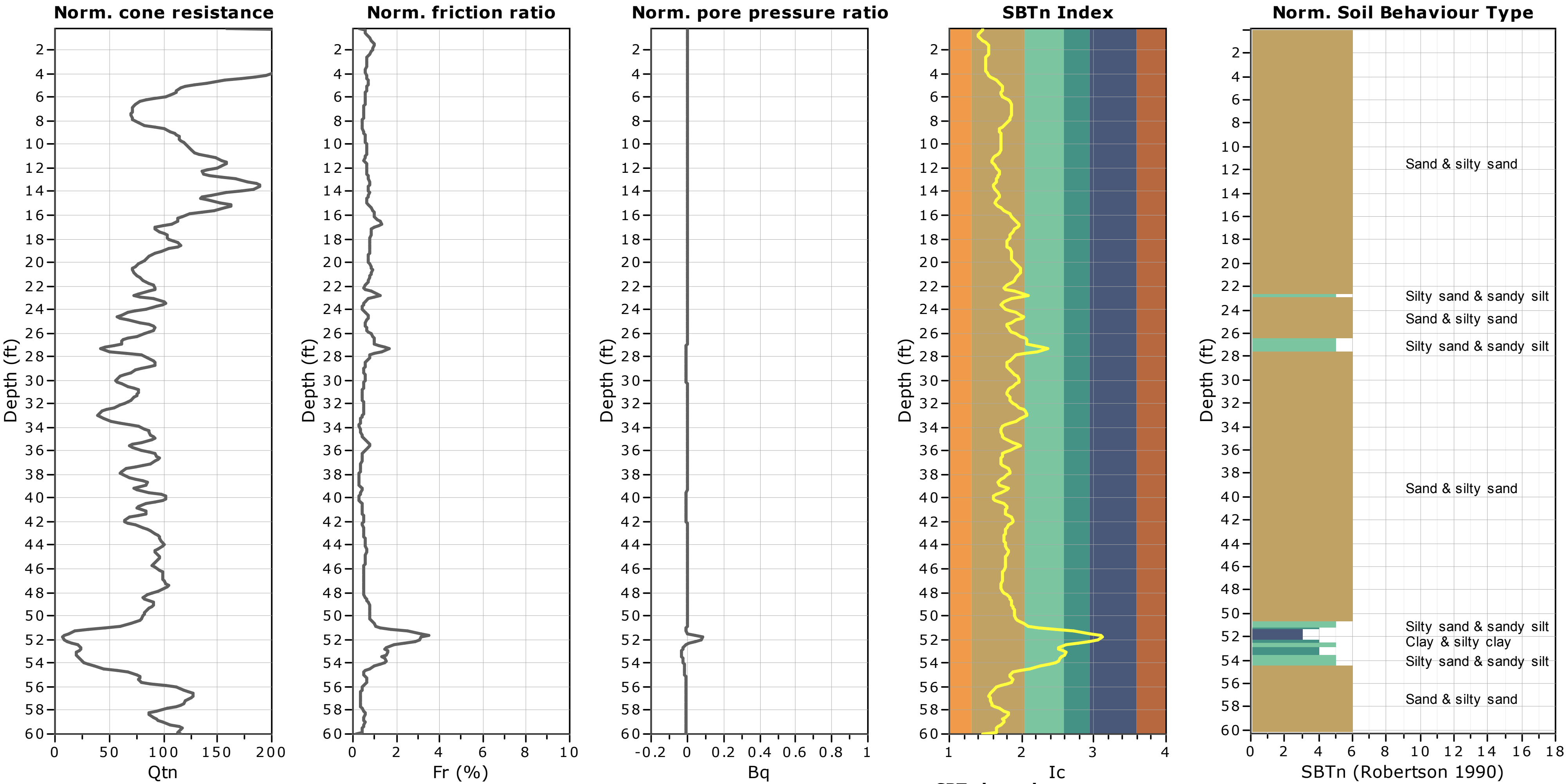
Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-1
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 65.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



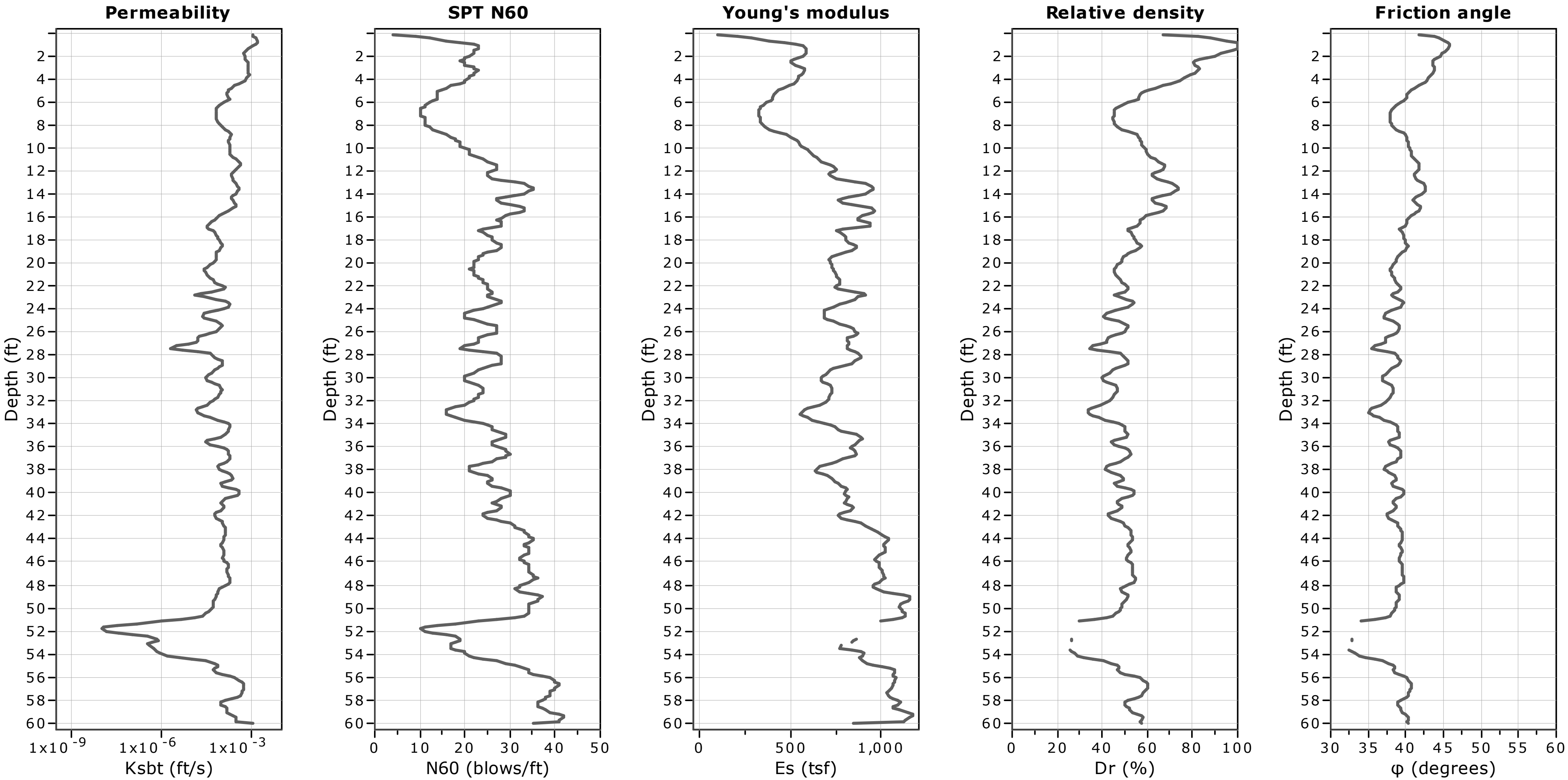
SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-1
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 65.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**

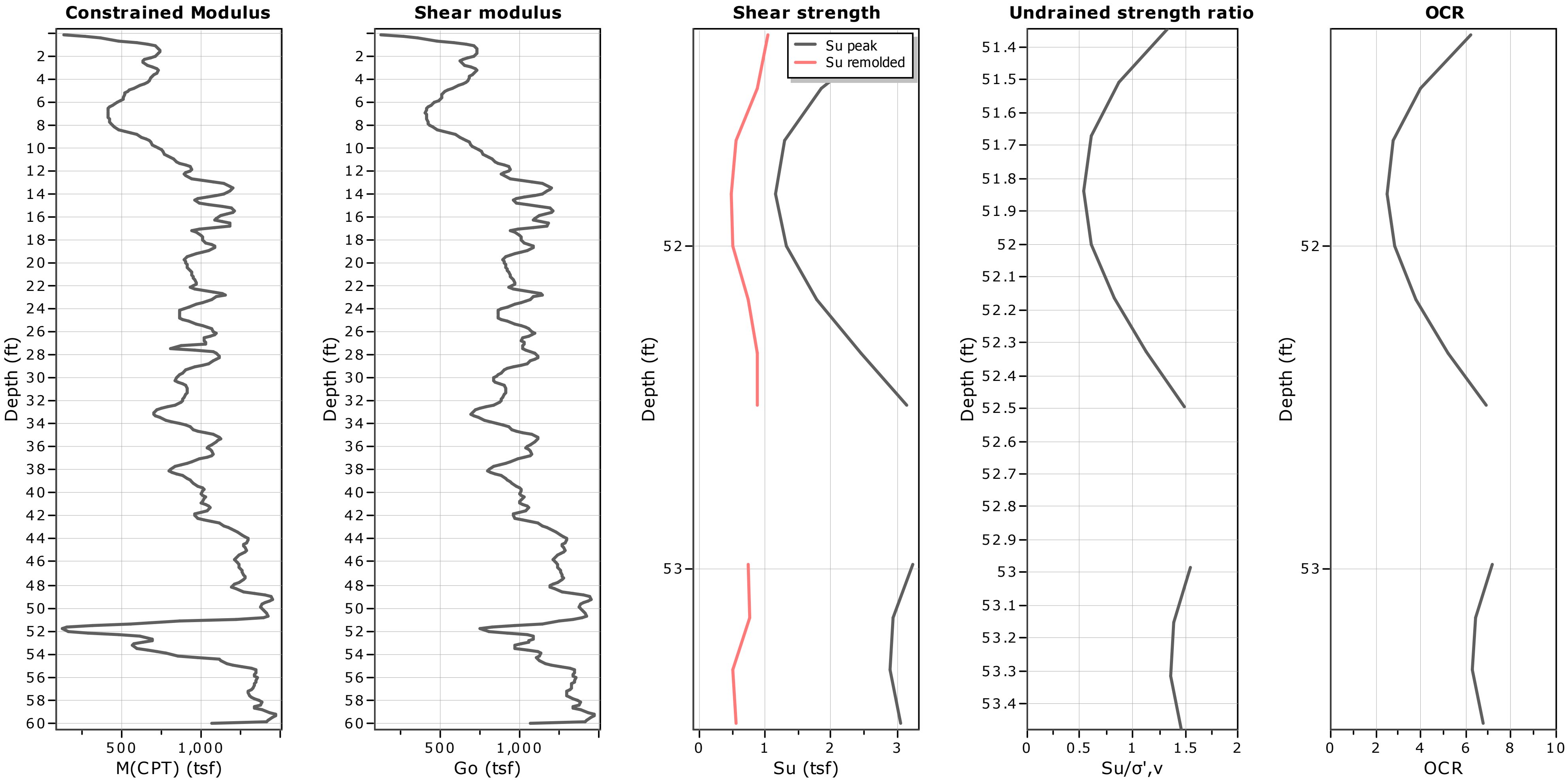


Calculation parameters
Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-1
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 65.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**

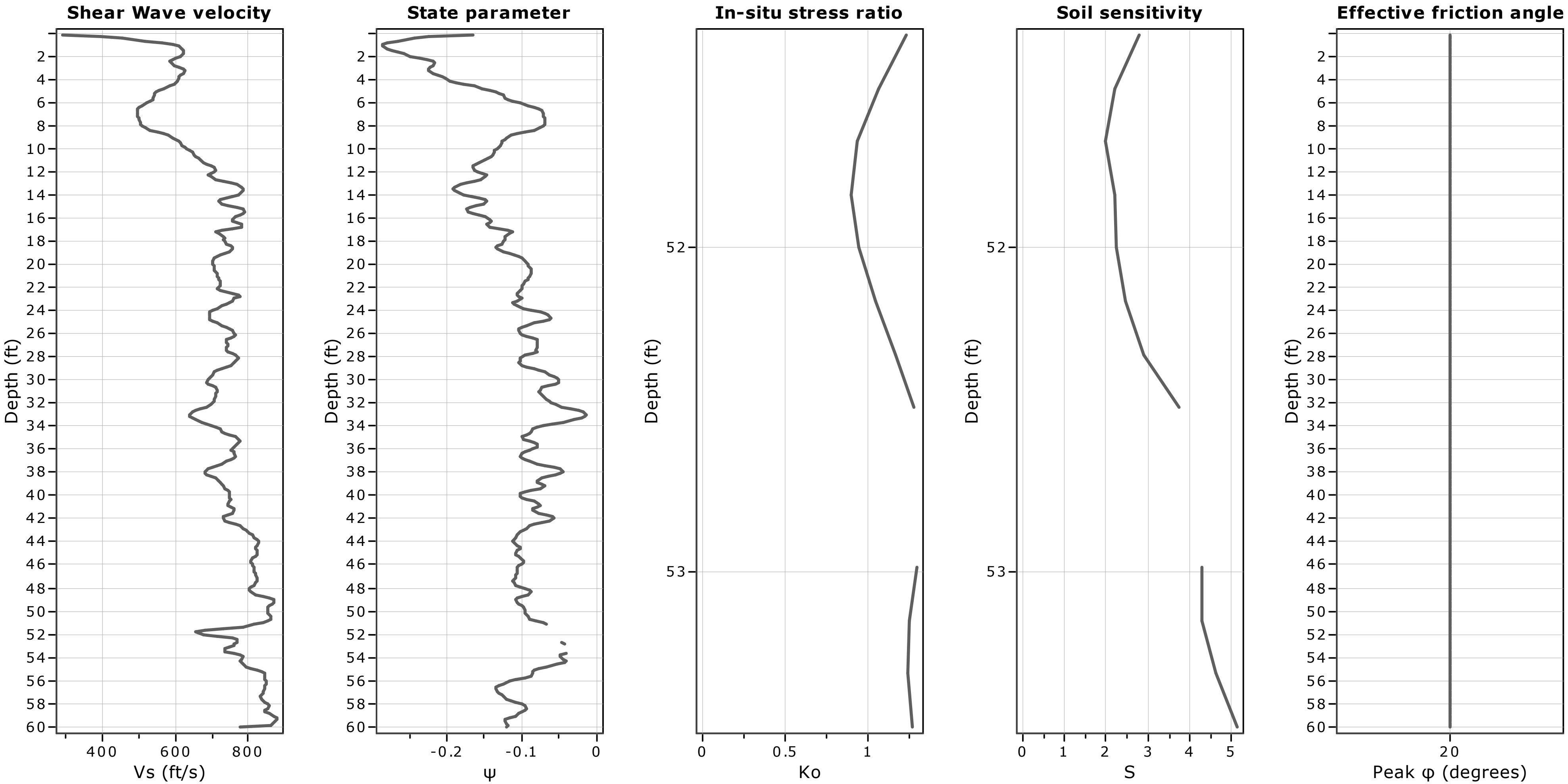


Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-1
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 65.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



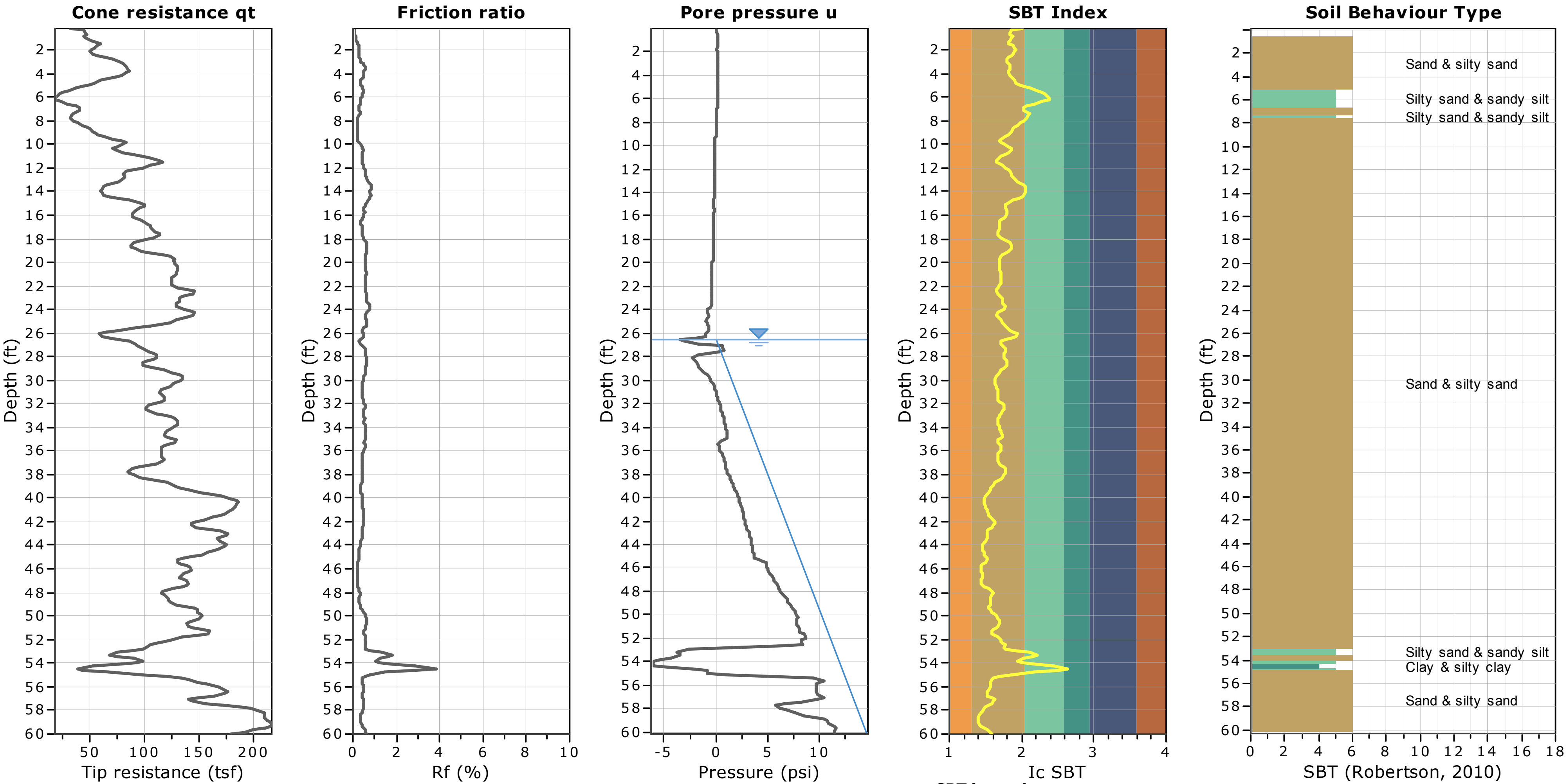
Calculation parameters

Soil Sensitivity factor, N_S: 7.00
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-2
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



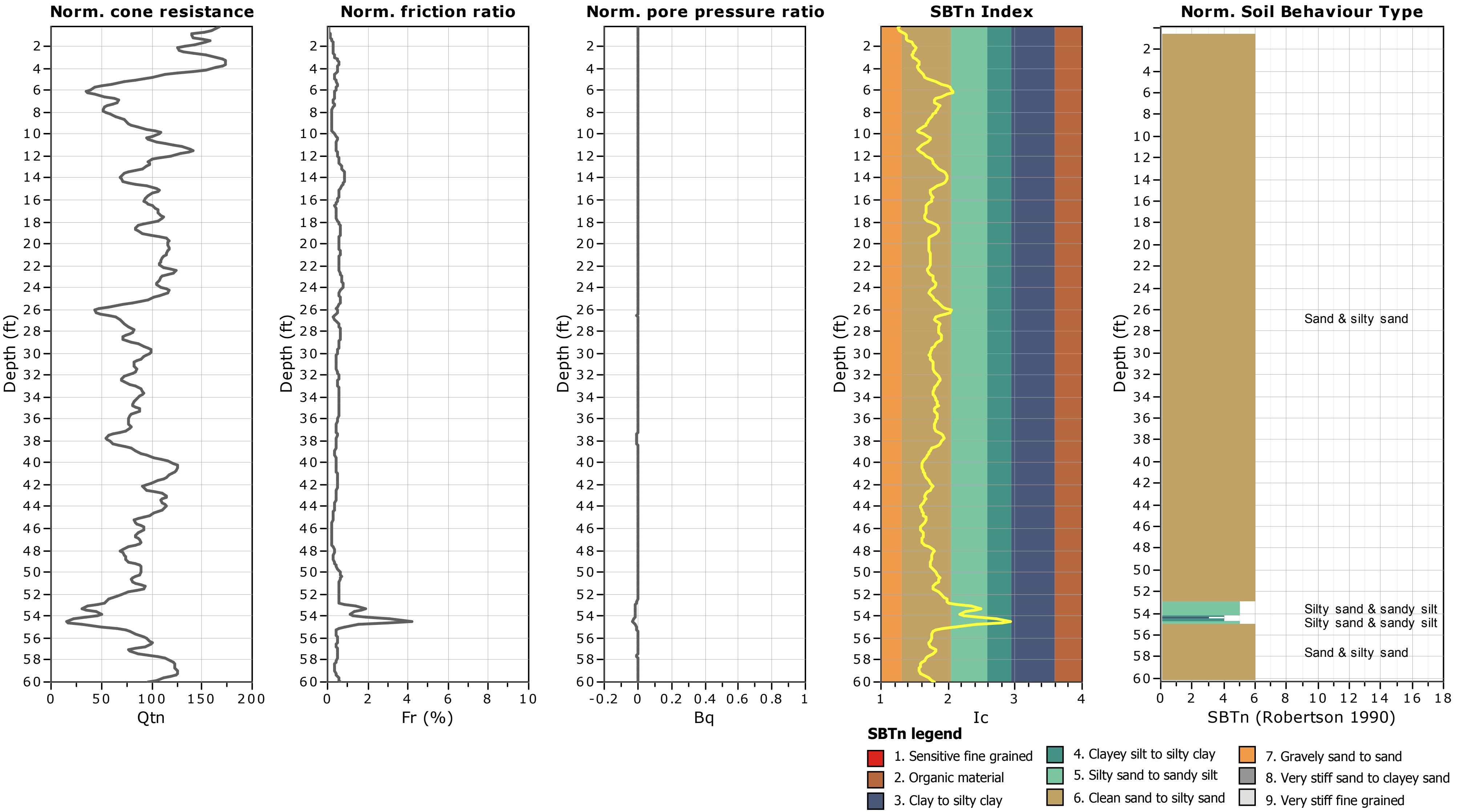
SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-2
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

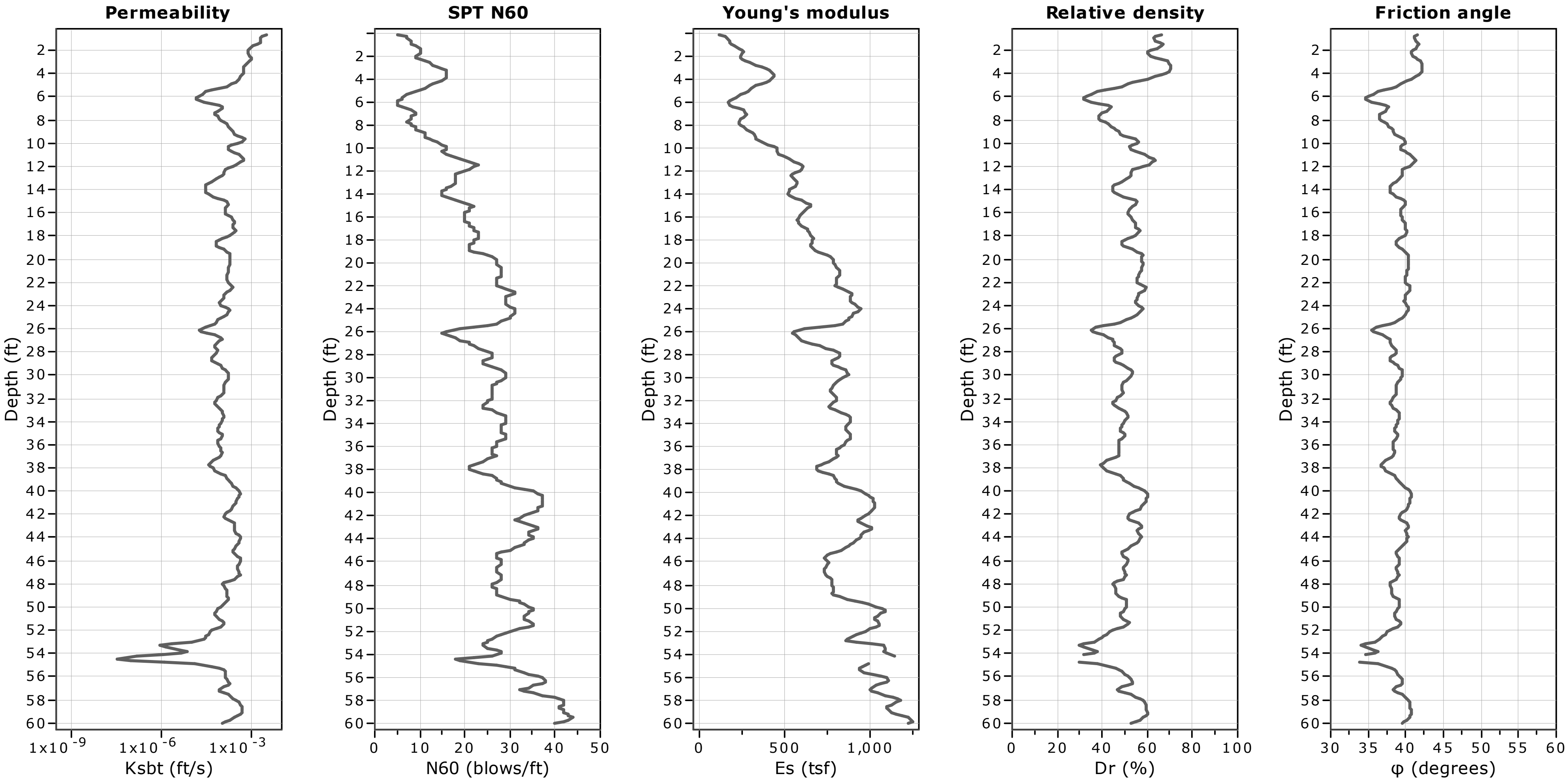
Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-2
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**

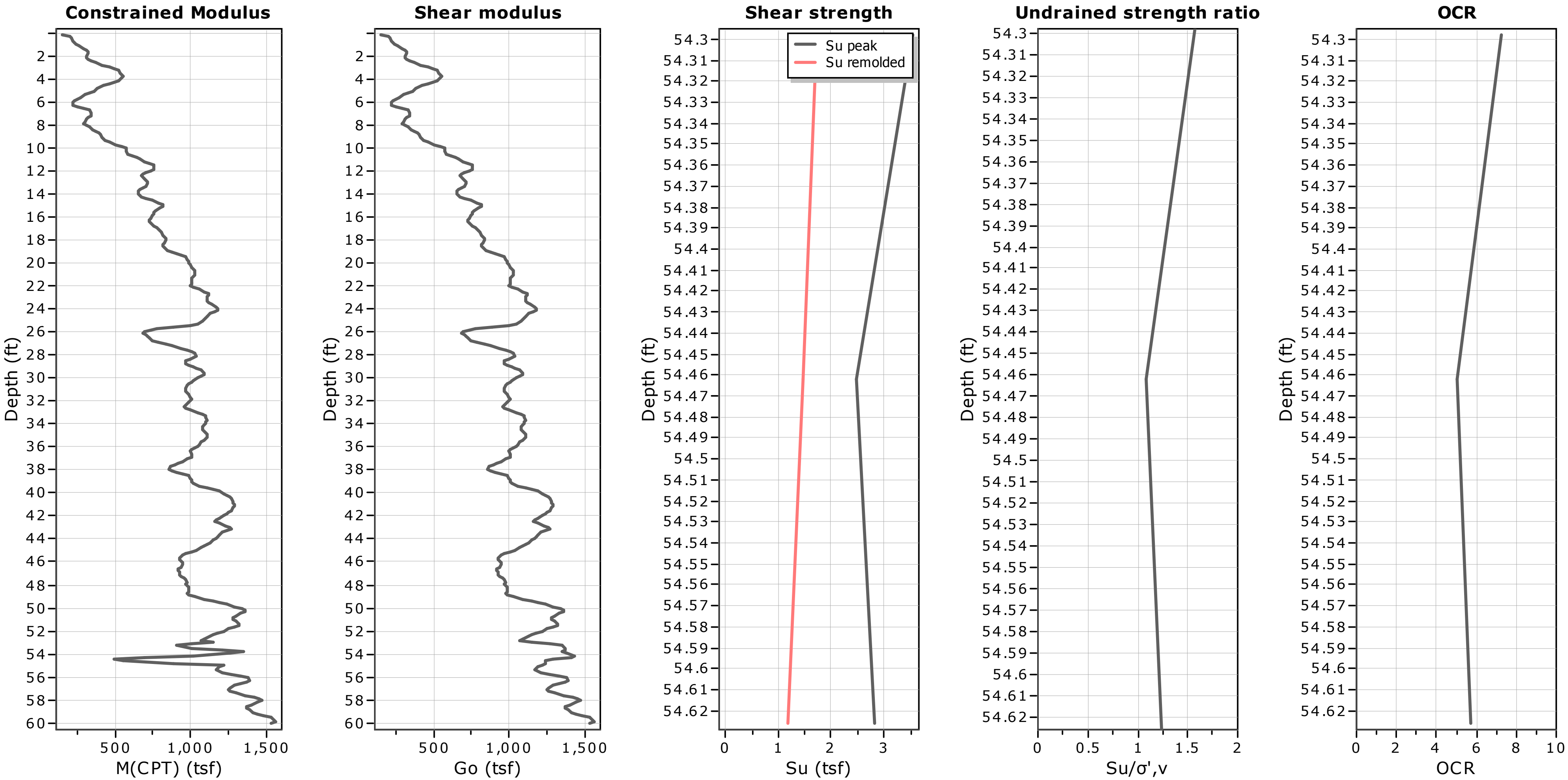


Calculation parameters
Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

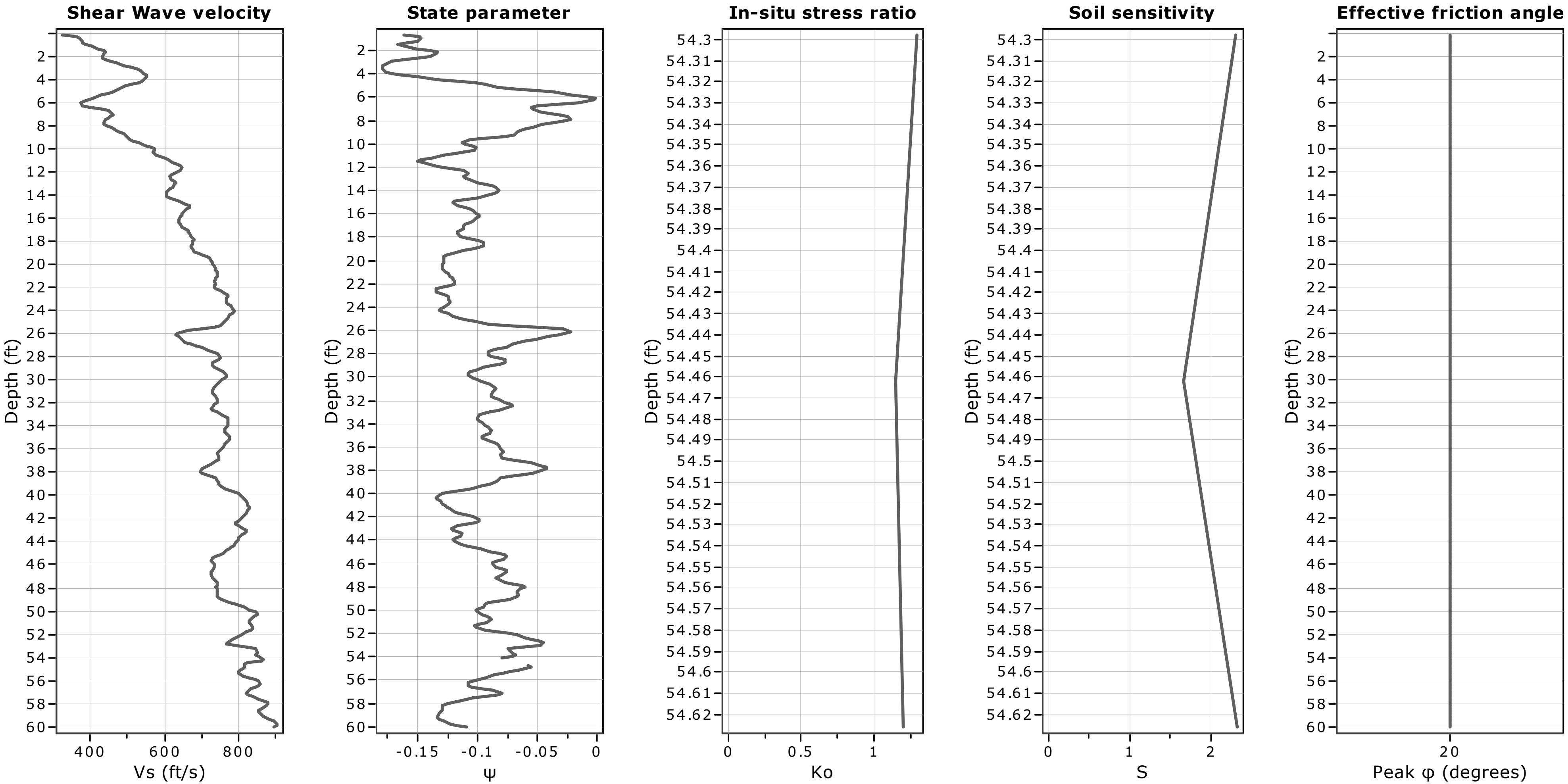
Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-2
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data



Calculation parameters

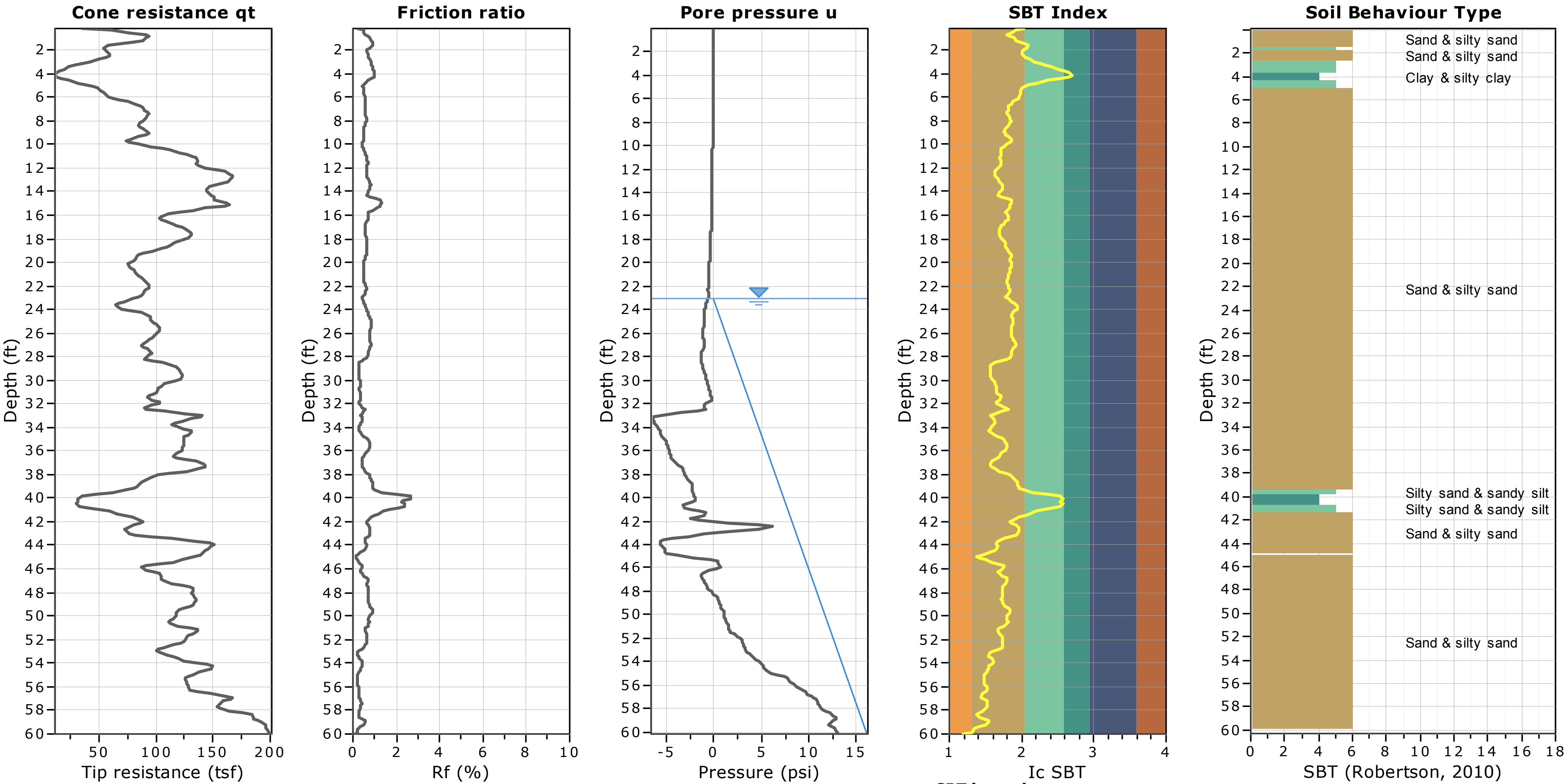
Soil Sensitivity factor, N_S: 7.00

User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-3
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 66.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



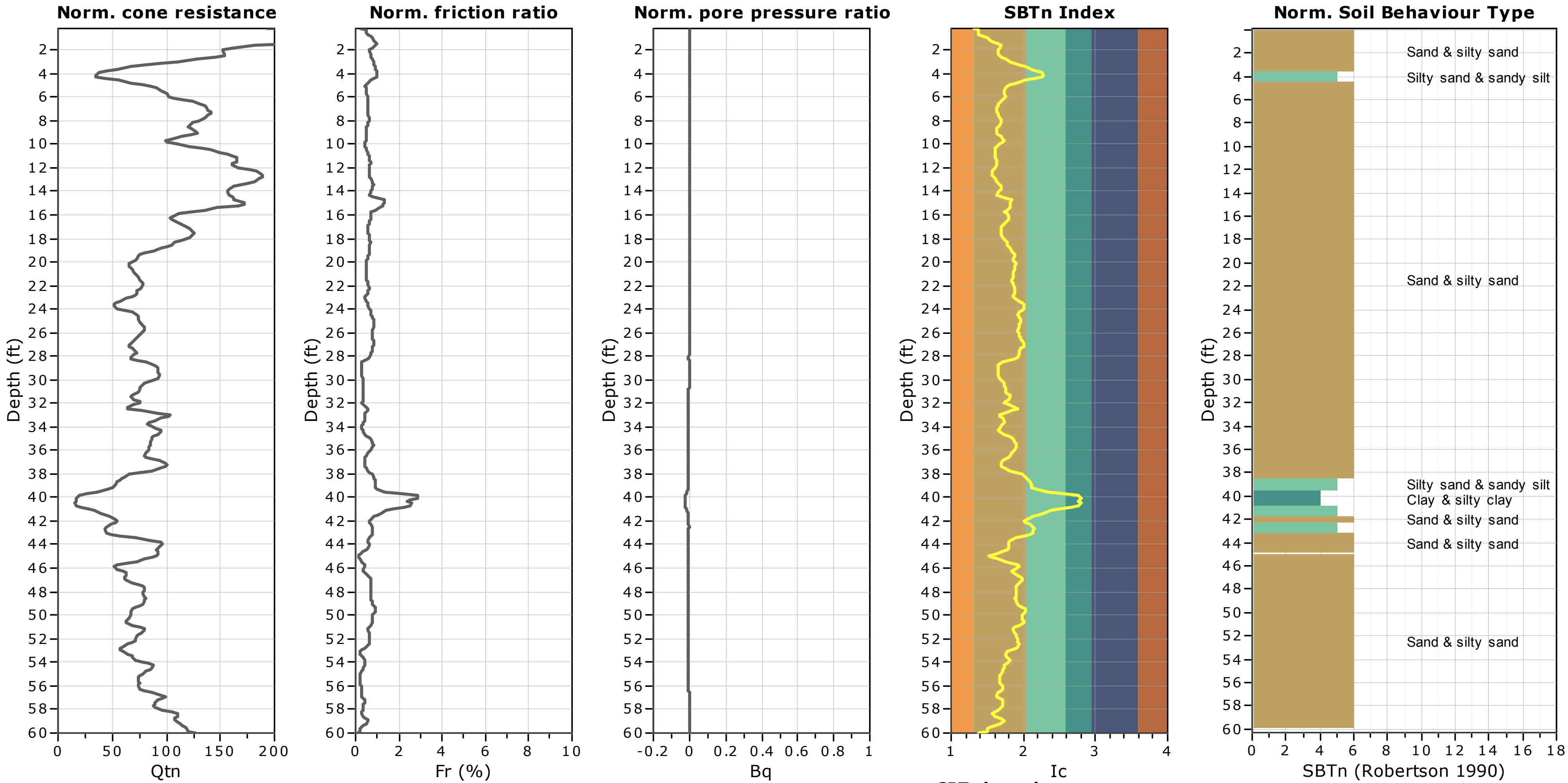
SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-3
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 66.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



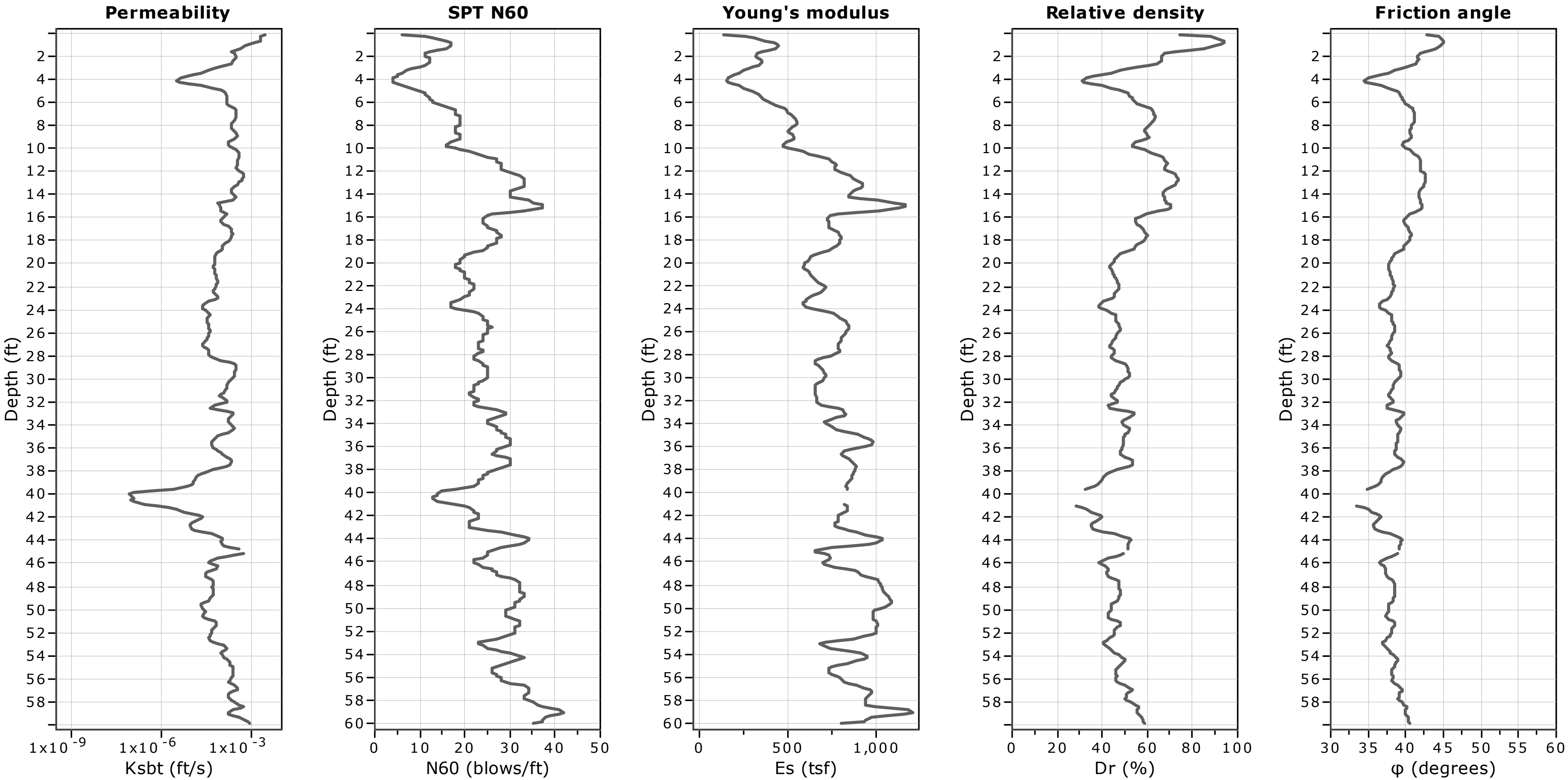
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty clay	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to clayey sand
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-3
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 66.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: Nagata Site
Location: 4617 North River Road, Oceanside, California



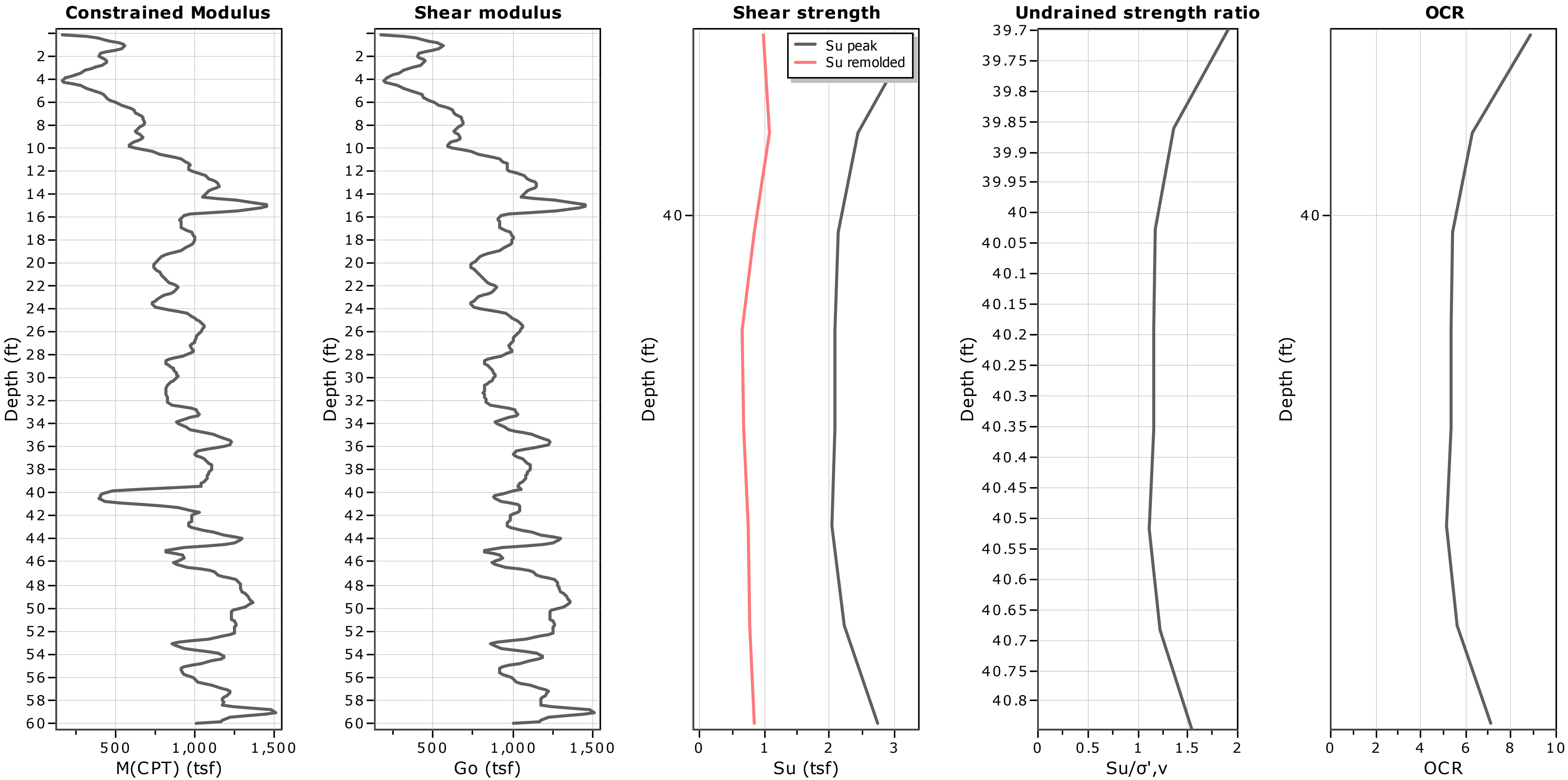
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

CPeT-IT v.1.7.6.42 - CPTU data presentation & interpretation software - Report created on: 12/1/2015, 1:51:30 PM
Project file: W:\2014 Jobs\2140692 - Residential Development, North River Road, Oceanside\Reports\2140692.01 Geotechnical Investigation\2140692.01 CPeT.cpt

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-3
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 66.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: Nagata Site
Location: 4617 North River Road, Oceanside, California



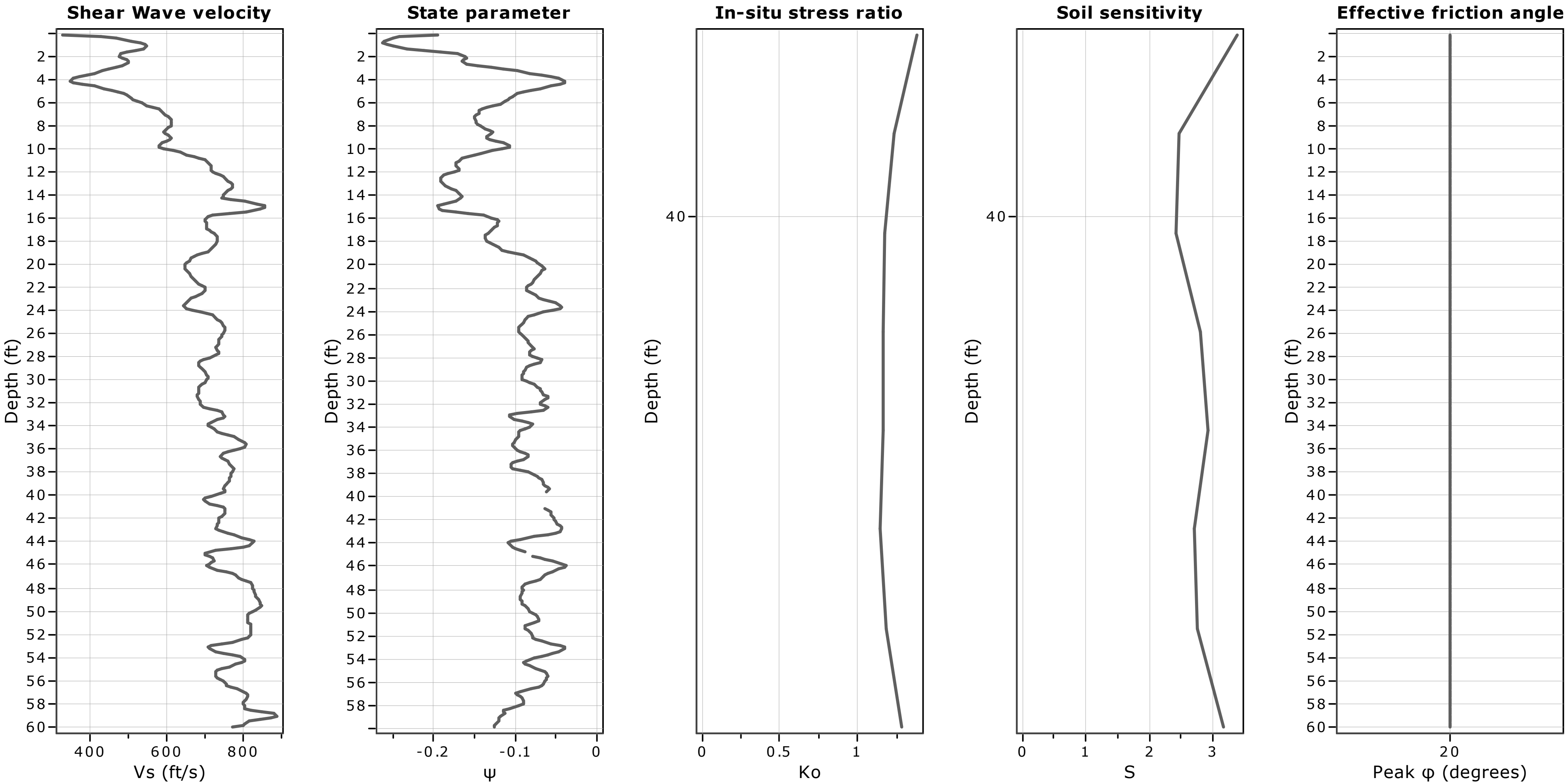
Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-3
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 66.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Calculation parameters

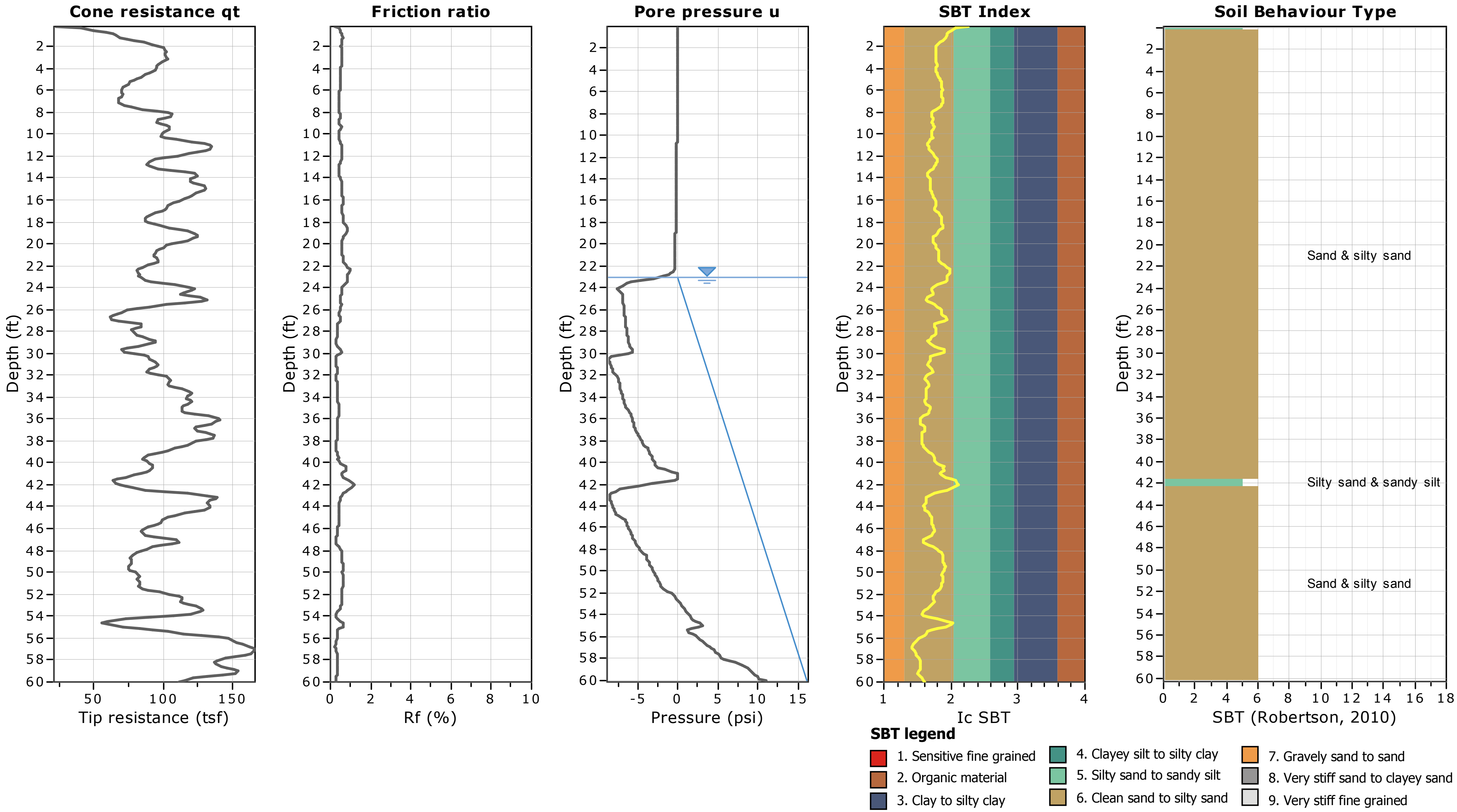
Soil Sensitivity factor, N_S: 7.00

User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-4
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

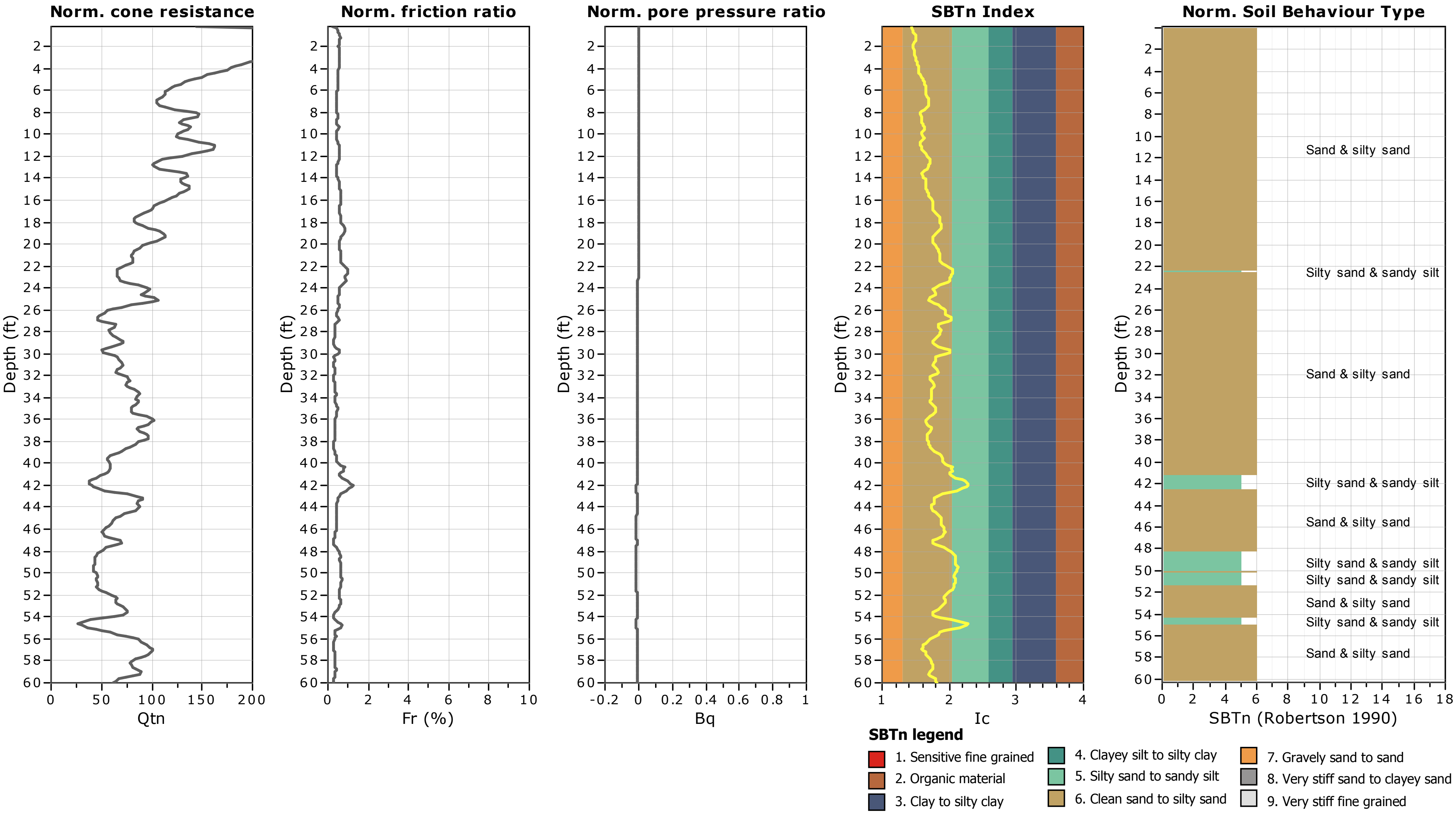
Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-4
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

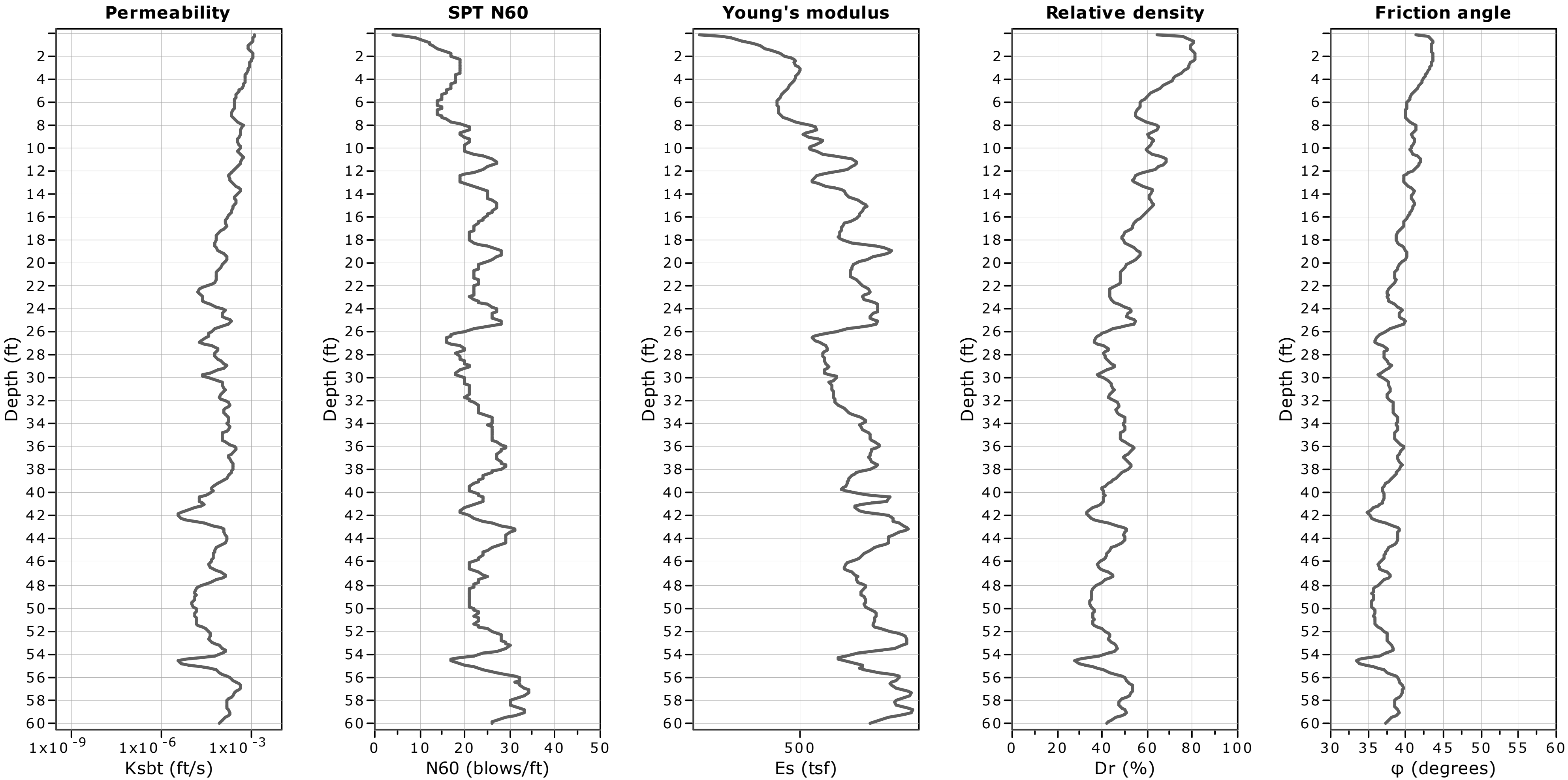
Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-4
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



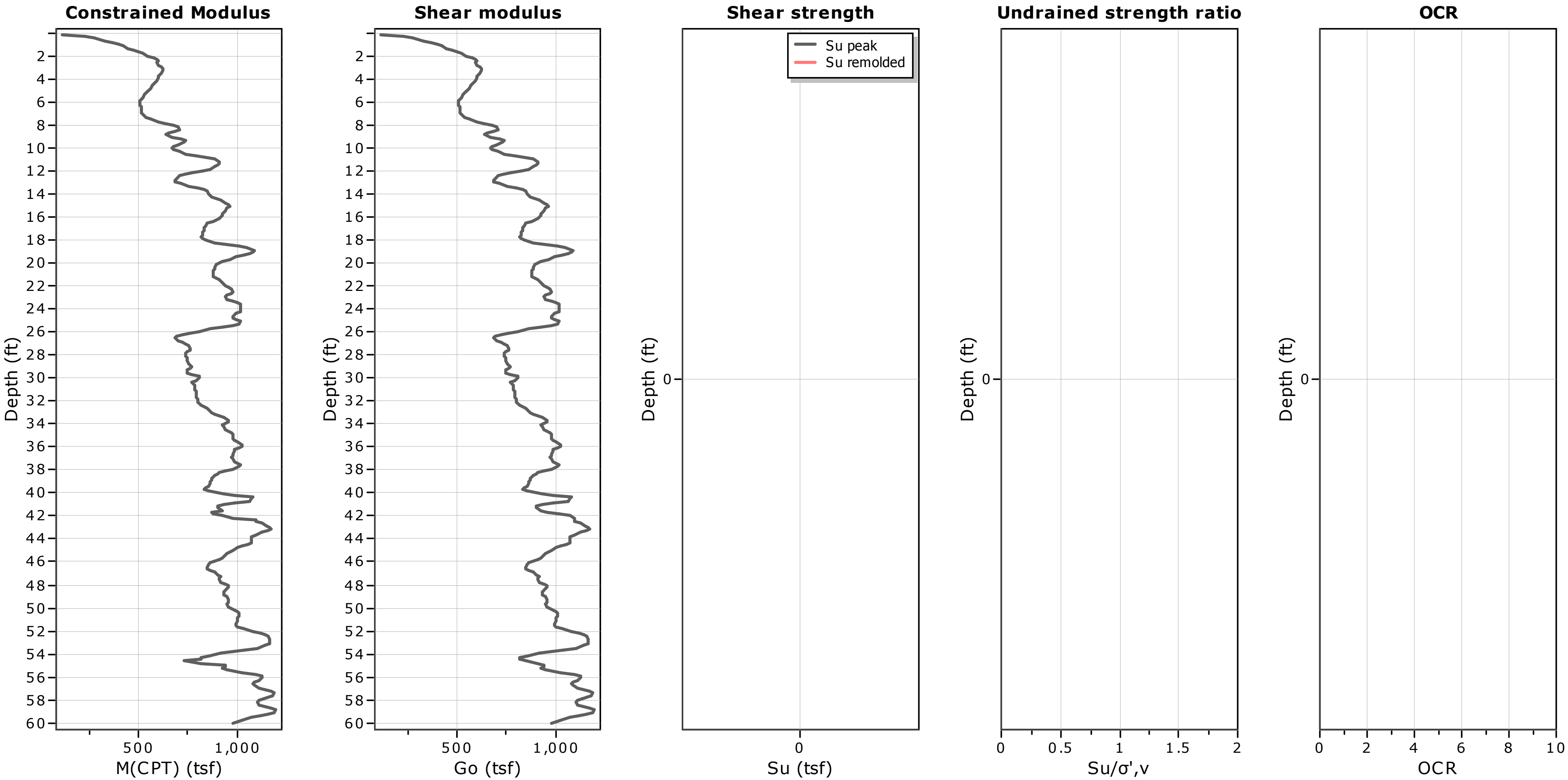
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-4
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**

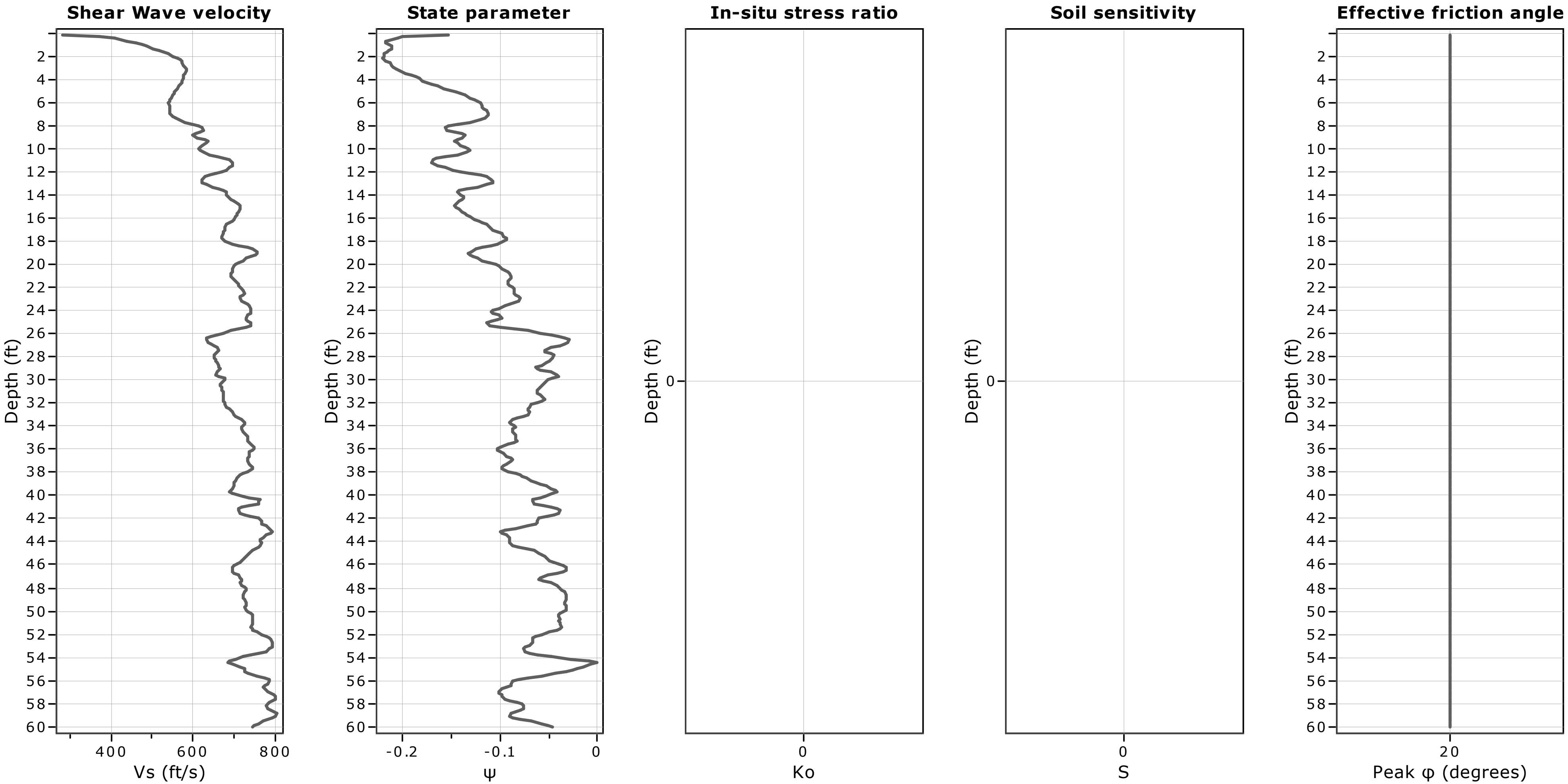


Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-4
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



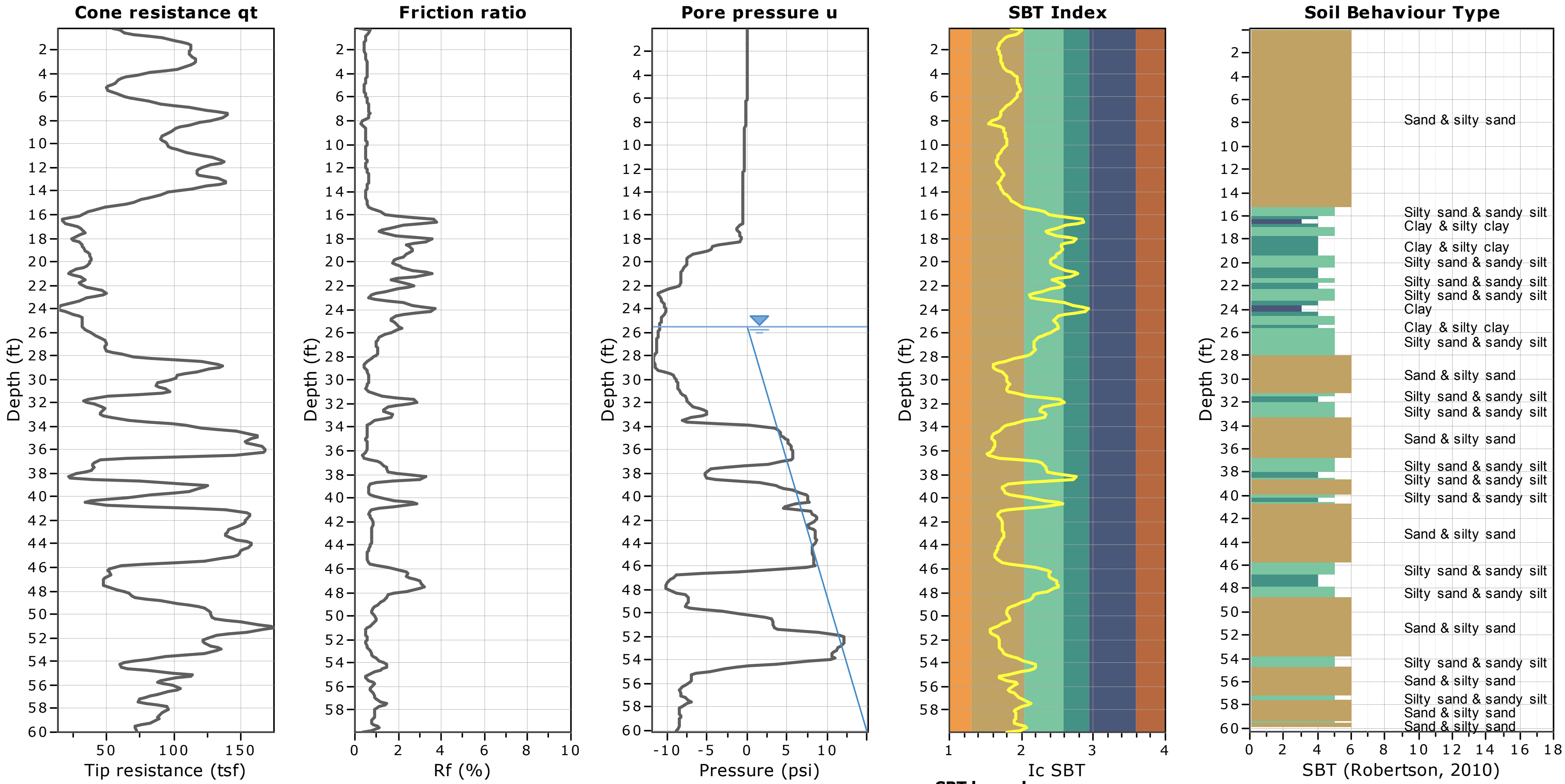
Calculation parameters

Soil Sensitivity factor, N_S: 7.00
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-5
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



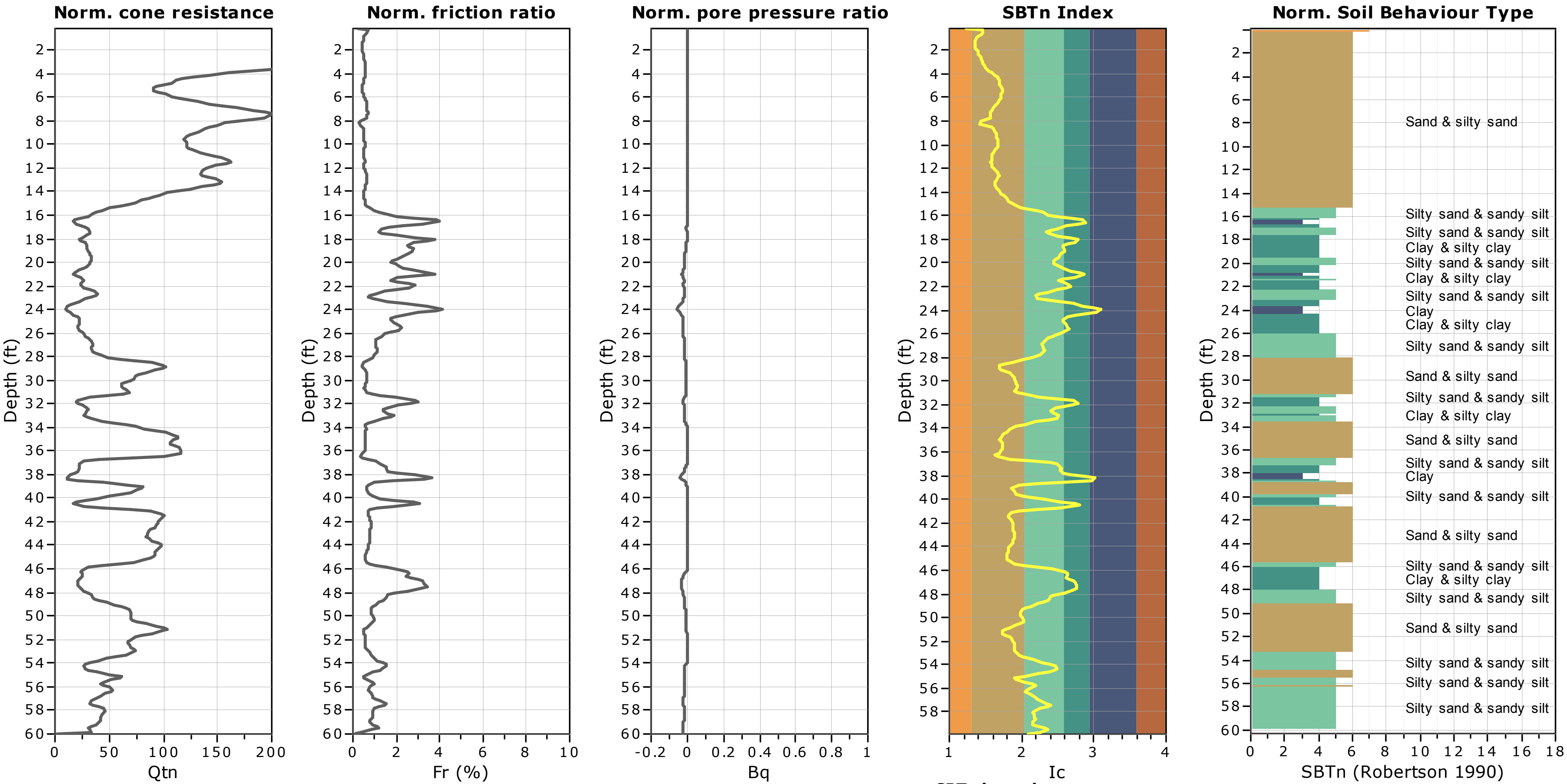
SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-5
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



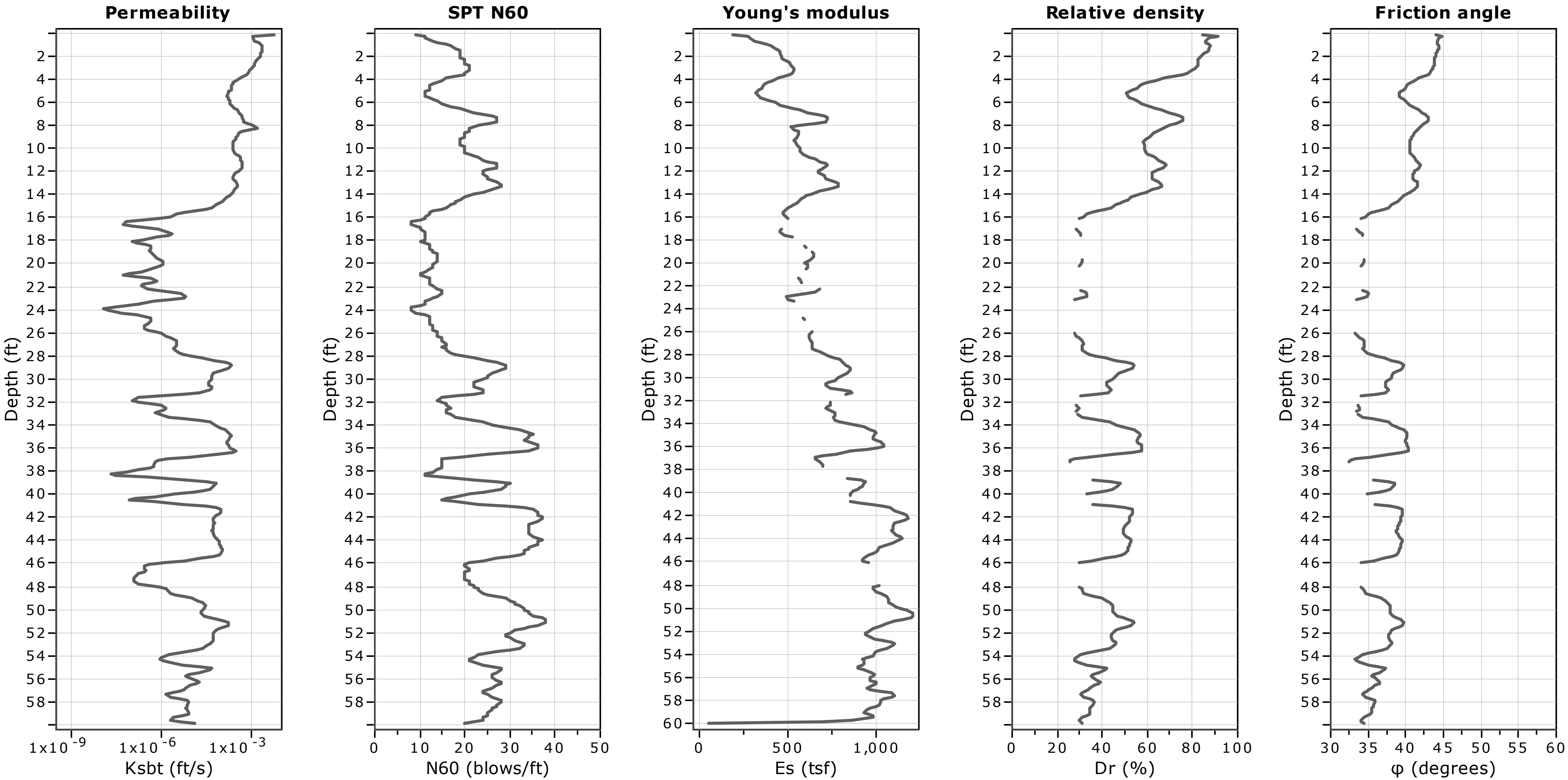
SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-5
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



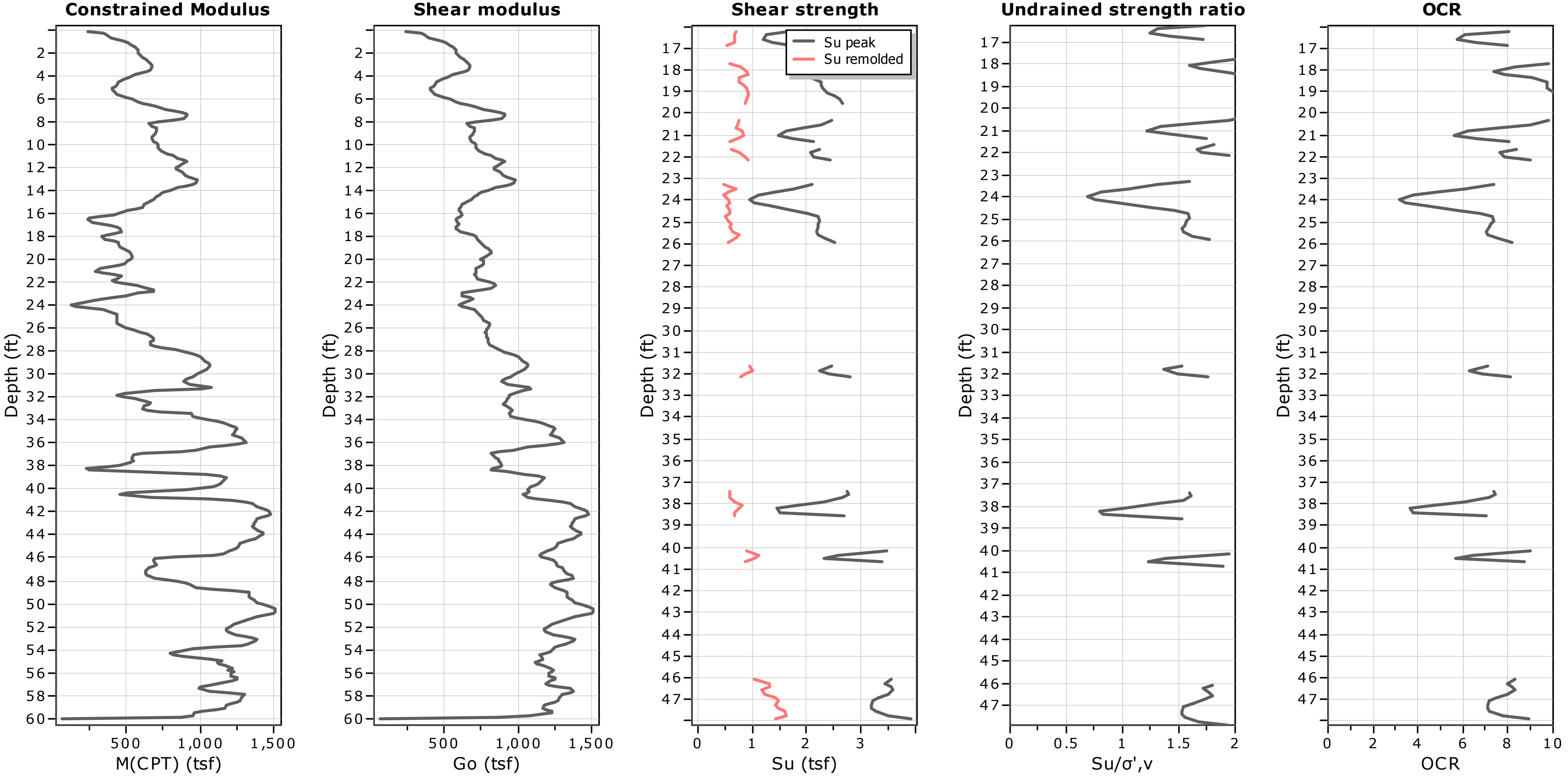
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-5
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



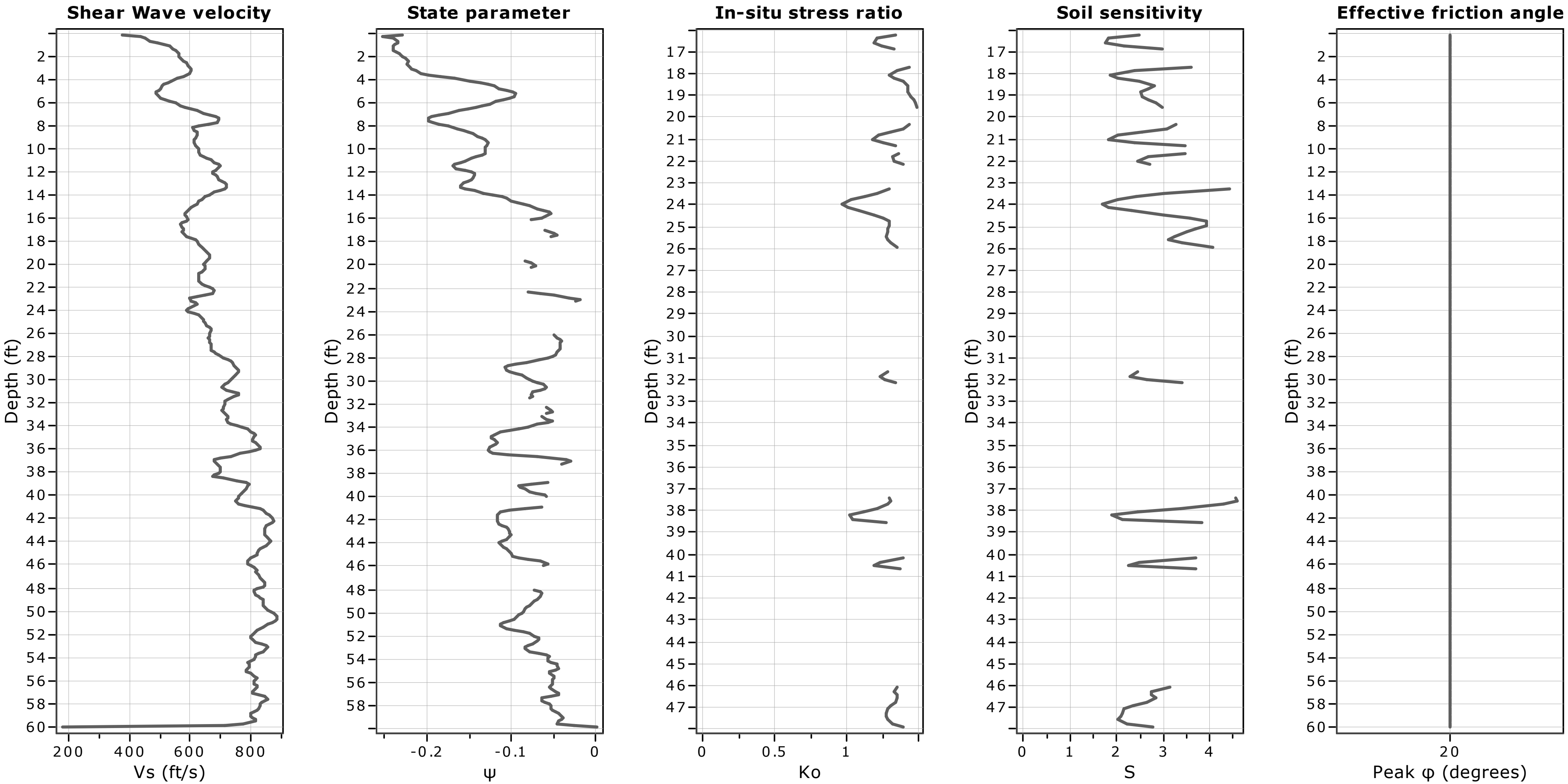
Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-5
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 68.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: Nagata Site
Location: 4617 North River Road, Oceanside, California



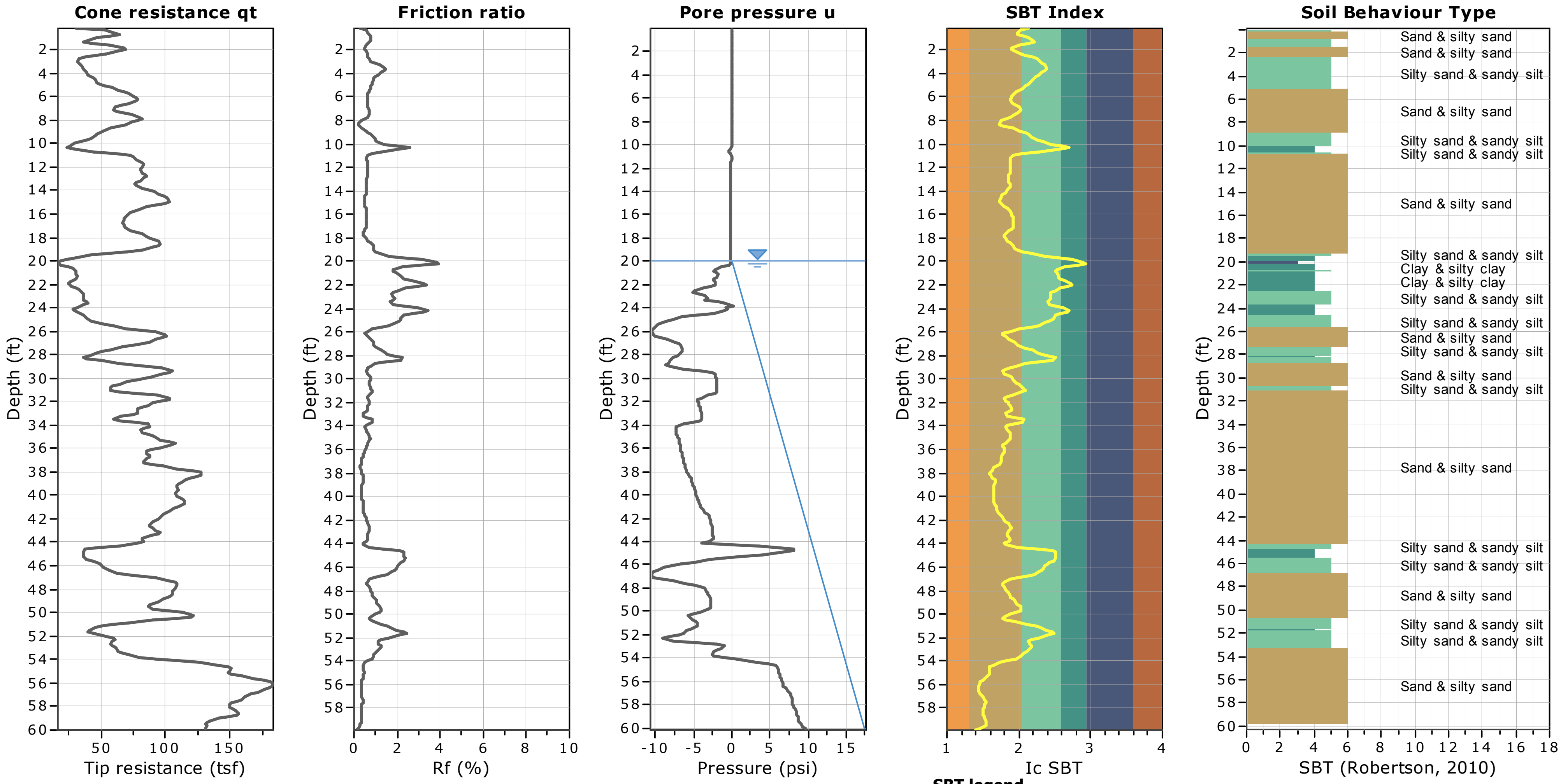
Calculation parameters

Soil Sensitivity factor, N_S: 7.00
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-6
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 71.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



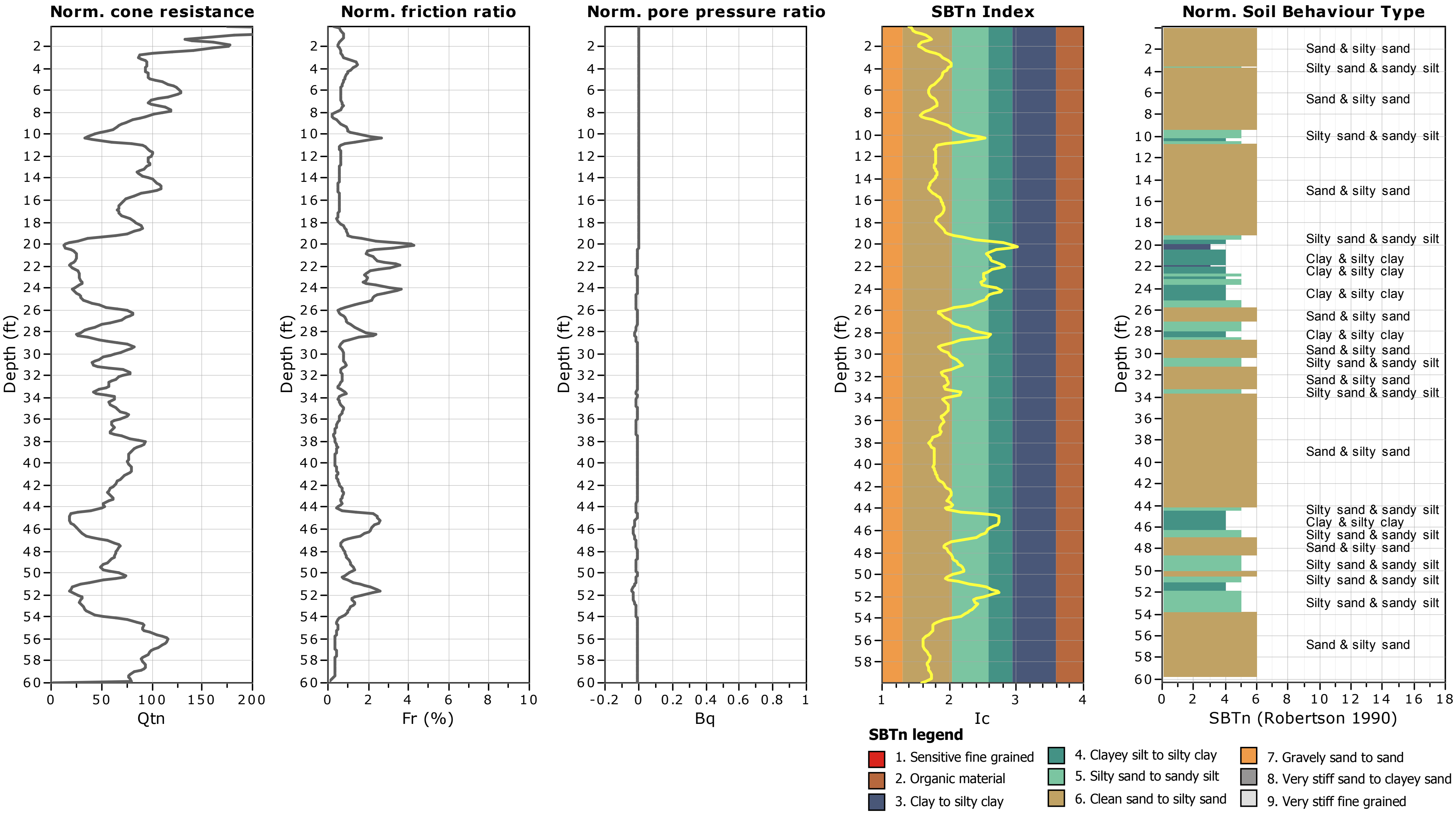
SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-6
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 71.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

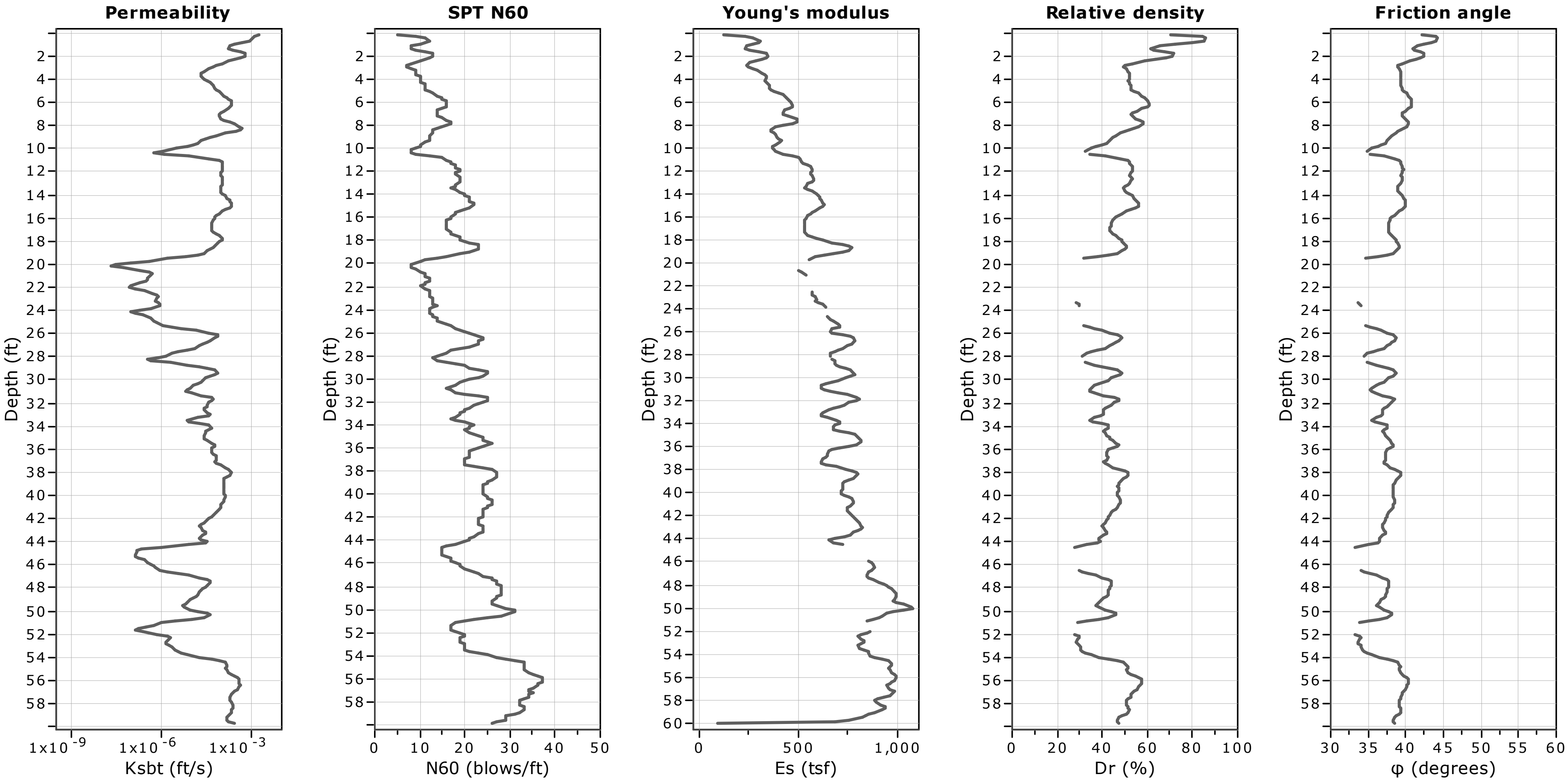
Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-6
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 71.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



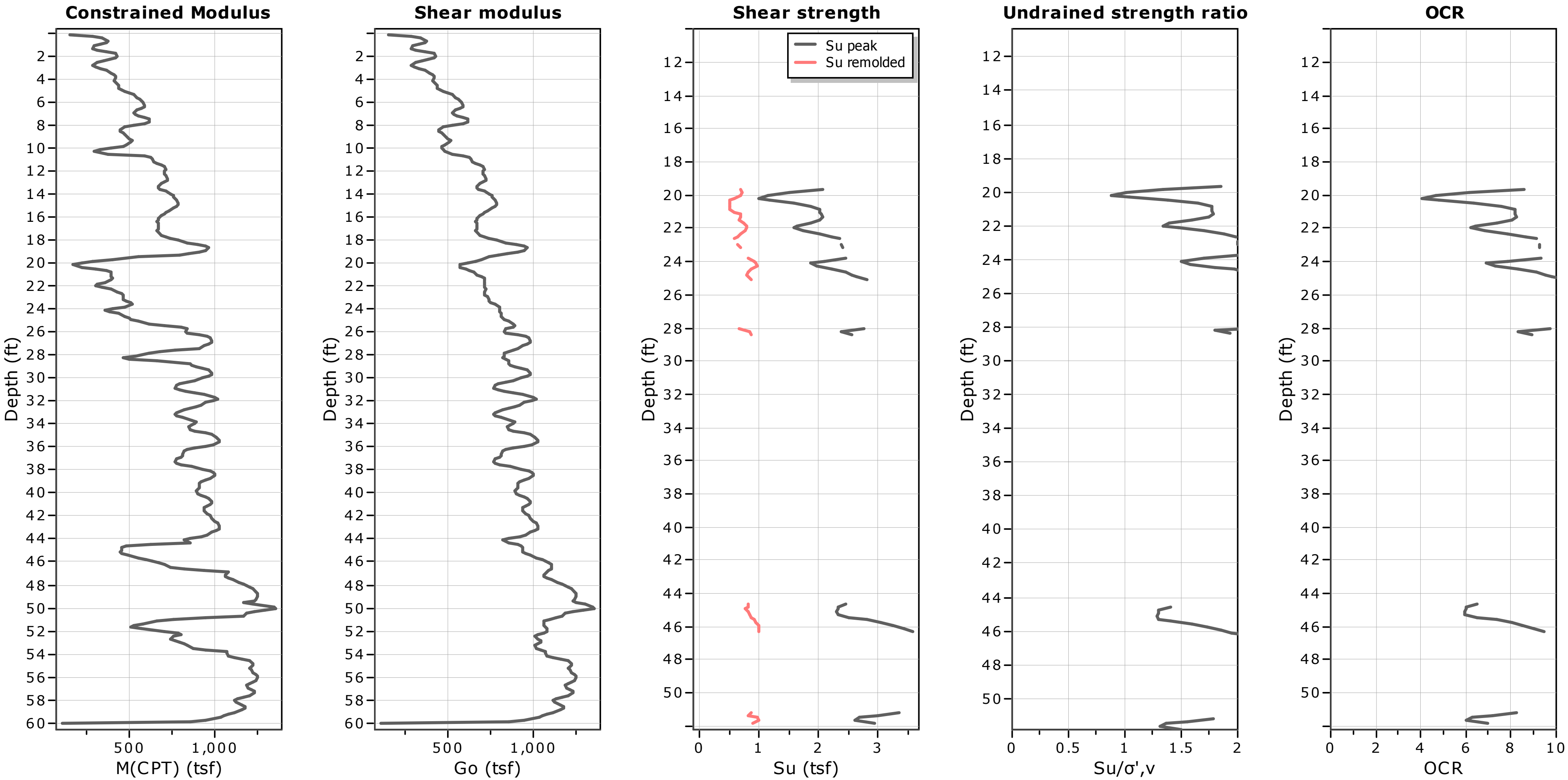
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative desnisty constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-6
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 71.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**

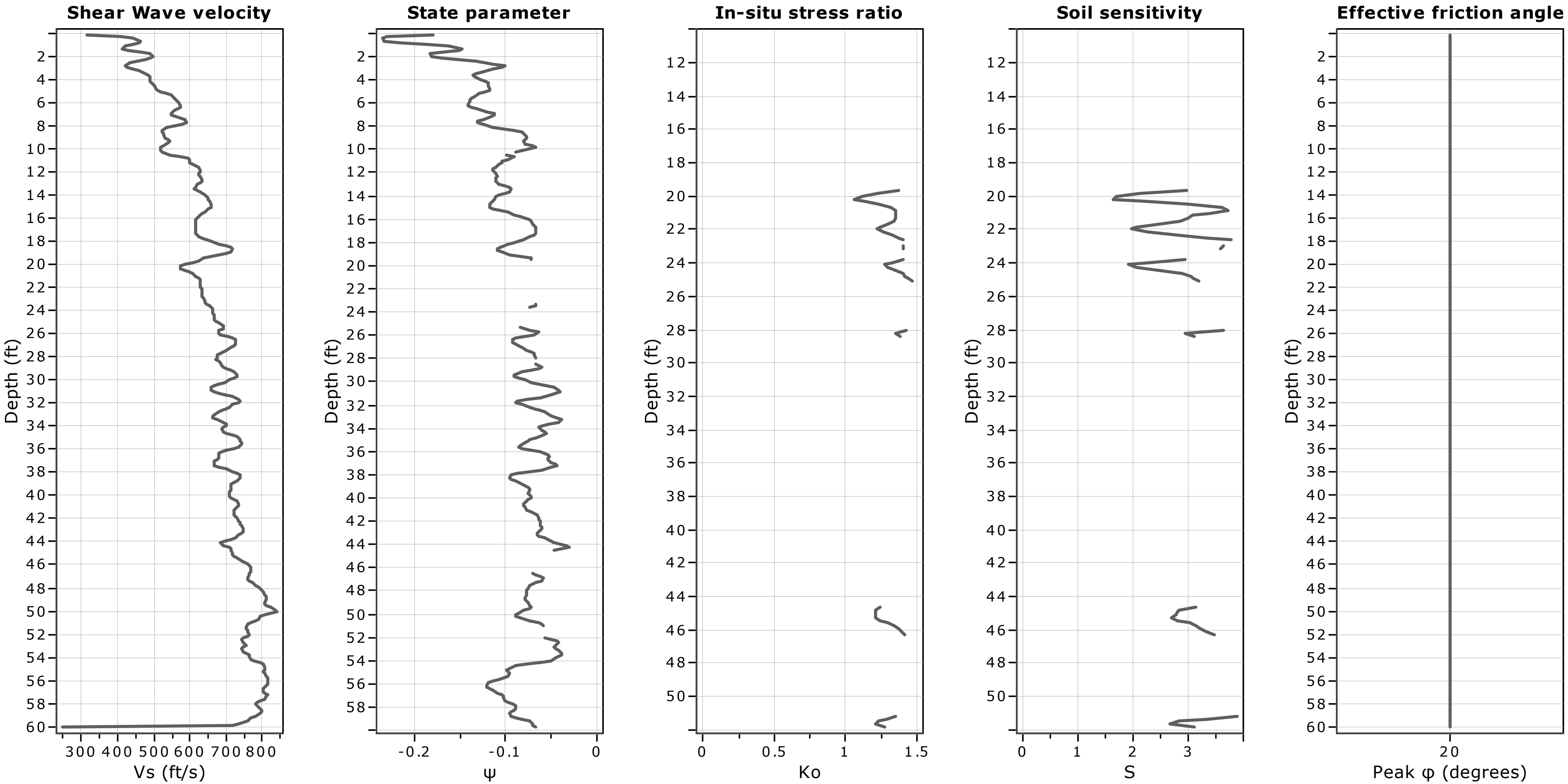


Calculation parameters
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data

Christian Wheeler Engineering
3980 Home Avenue
San Diego, California 92105

CPT: CPT-6
Total depth: 60.04 ft, Date: 10/7/2015
Surface Elevation: 71.00 ft
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator: Kehoe Testing & Engineering

Project: **Nagata Site**
Location: **4617 North River Road, Oceanside, California**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00
User defined estimation data

Appendix B

Data from Previous Studies (CWE, 2005)

LOG OF TEST BORING NUMBER B-1

Date Excavated:	6/14/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	19 feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Artificial Fill (Qaf):** Light brownish-gray, dry to damp, loose, SILTY SAND (SM), with gravels.						SA, SO_4
4		**Topsoil:** Light to medium brown, damp to moist, loose to medium dense, SILTY SAND (SM), fine-grained.	Cal		24			
		Alluvium (Qal): Light gray, damp, medium dense, POORLY-GRADED SAND (SP), medium-grained, friable, micaceous, with slight iron staining.	Cal		28	2.5	104.2	SA, MD, SO_4
6								
8								
10			Cal		22	3.1	101.1	
12								
14			Cal		31	4.5	96.5	
16		At 15 feet becomes moist.						
18	▽	At 18 feet becomes wet.						
20		At 19 feet becomes saturated.	Cal		63	2.8	87.4	

Boring terminated at 20 feet. Boring properly backfilled with 6.5 cubic feet of bentonite grout mix.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	2

LOG OF TEST BORING NUMBER B-2

Date Excavated:	6/14/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Artificial Fill (Qaf):** Light brownish-gray, dry to damp, loose, SILTY SAND (SM). Concrete pieces present from 1-2 feet.						
4		**Topsoil:** Light to medium brown, dry, loose, SILTY SAND (SM), fine-grained.	Cal		24	2.8	87.4	
6		**Alluvium (Qal):** Light to medium gray, damp, loose to medium dense, POORLY-GRADED SAND (SP), medium-grained, friable.	Cal		18	4.4	96.9	
8								
10		At 9 feet becomes moist, medium dense.	Cal		27	6.3	104.7	
12								
14			Cal		26	10.4	97.3	
16		At 15 feet becomes very moist.						
18			Cal		41	18.6	108.4	
20		Boring terminated at 19 feet.						

CHRISTIAN WHEELER ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	3

LOG OF TEST BORING NUMBER B-3

Date Excavated:	6/14/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		Artificial Fill (Qaf): Light brownish-gray, damp to moist, loose, SILTY SAND (SM), with minor trash.						R-Val
2		**Topsoil:** Light to medium brown, moist, loose, SILTY SAND (SM), fine to medium-grained, micaceous.	Cal		18	8.4	100.2	
4		**Alluvium (Qal):** Light to medium gray, damp, medium dense, SILTY SAND-POORLY-GRADED SAND (SM-SP), medium-grained, friable, micaceous, with trace gravels and slight iron staining.	Cal		20	3.6	103.5	SA
6								
8								
10			Cal		25	3.4	104.9	
12								
14			Cal		27	3.4	101.4	
16								
18		At 18 feet grades to wet.	Cal		37	17.2	106.3	
20		Boring terminated at 19 feet.						

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	4

LOG OF TEST BORING NUMBER B-4

Date Excavated:	6/14/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	17½ feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
0–2		**Topsoil:** Light grayish-brown, damp, loose to medium dense, SILTY SAND (SM), micaceous, with plastic trash.						
2		**Alluvium (Qal):** Light to medium gray, damp, medium dense, POORLY-GRADED SAND (SP), medium-grained, micaceous, friable.	Cal		26	2.4	97.8	
4			Cal		25	4.2	101.5	MD, SA, SO_4, DS
6								
8		At 7 feet becomes moist.						
10			Cal		30	5.1	98.6	
12								
14		At 14½ feet becomes very moist.	Cal		42	7.7	106.6	
16		At 16 feet becomes wet.						
18	▽	At 17½ feet becomes saturated.						
20			Cal		38	18.6	109.8	

Boring terminated at 20 feet. Boring properly backfiled with 6.5 cubic feet of bentonite grout mix.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT
4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	5

LOG OF TEST BORING NUMBER B-5

Date Excavated:	6/14/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	17½ feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
0–2		**Topsoil:** Light brownish-gray, damp, loose, SILTY SAND (SM).						
2		**Alluvium (Qal):** Light to medium gray, dry to damp, loose to medium dense, POORLY-GRADED SAND (SP), medium-grained, micaceous, friable.	Cal		26	1.9	95.6	
4			Cal		13	2.7	100.5	
6								
8								
10			Cal		13	3.8	95.9	
12								
14		At 13 feet becomes moist.	Cal		28	13.7	111.5	
16								
18	▽	At 17½ feet becomes saturated.						
20			Cal		47	15.6	111.9	

Boring terminated at 20 feet. Boring properly backfilled with 6.5 cubic feet of bentonite grout mix.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	6

LOG OF TEST BORING NUMBER B-6

Date Excavated:	6/15/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
2		**Artificial Fill (Qaf):** Light to medium brownish-gray, dry, medium dense, SILTY SAND (SM), with trace gravels and minor metal debris. At 1 foot becomes damp.	Cal		38	3.2	101.6	R-Val
4		**Topsoil:** Light to medium brown, dry, loose, SILTY SAND (SM), fine to medium-grained.	Cal		23	0.8	99.6	
6		**Alluvium (Qal):** Light to medium gray, dry, medium dense, POORLY-GRADED SAND (SP), medium-grained, friable.						
8		At 8 feet becomes damp.						
10			Cal		38	2.5	99.8	
12								
14			Cal		29	2.9	102.8	
16		At 15 feet becomes moist.						
18		At 18 feet becomes wet.	Cal		46	20.6	102.8	
20		Boring terminated at 19 feet.						

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	7

LOG OF TEST BORING NUMBER B-7

Date Excavated:	6/15/2005	Logged by:	AKN
Equipment:	CME-55	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	N/A
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		Artificial Fill (Qaf): Light to medium brown, moist, medium dense, SILTY SAND (SM), with AC debris.						SA, MD
2			Cal		30	13.0	114.4	
4		**Alluvium (Qal):** Light to medium gray, moist, medium dense, POORLY-GRADED SAND (SP), medium-grained, friable.	Cal		23	5.6	99.3	
6								SA, SO_4
8								
10			Cal		21	3.1	98.6	
12								
14			Cal		45	3.9	105.8	
16		At 15 feet becomes moist.						
18		At 18 feet becomes wet.	Cal		35	20.0	105.2	
20		Boring terminated at 19 feet.						

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	8

LOG OF TEST BORING NUMBER B-8 (Continued)

Date Excavated:	7/11/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	19 feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
22		**<u>Alluvium (Qal):</u>** Light to medium gray, saturated, medium dense, POORLY-GRADED SAND (SP), medium to coarse to very coarse-grained, friable.						
24			SPT		19			SA
26								
28								
30		At 29 feet becomes medium to coarse-grained.	SPT		27			
32								
34			SPT		29			
36								
38								
40			SPT		29			SA

Boring continued on Plate No. 11.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	10

LOG OF TEST BORING NUMBER B-8 (Continued)

Date Excavated:	7/11/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	19 feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
42		**Alluvium (Qal):** Light to medium gray, saturated, medium dense, POORLY GRADED SAND (SP), medium to coarse-grained, friable.						
44		Medium gray, saturated, dense, POORLY-GRADED SAND-SILTY SAND (SP-SM), medium-grained, slightly micaceous, friable.	SPT		35			
46								
48		Medium brownish-gray, saturated, dense, SILTY SAND (SM), fine to medium-grained, micaceous.	SPT		30			SA
50								
52								
54		Light to medium gray, saturated, very dense, POORLY GRADED SAND (SP), coarse-grained, friable.	SPT		77			SA
56								
58								
60		Boring properly backfilled with 20.5 cubic feet of bentonite grout mix.	SPT		60			SA

Boring terminated at 60 feet.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	11

LOG OF TEST BORING NUMBER B-8

Date Excavated:	7/11/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	19 feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
0–2		**Artificial Fill (Qaf):** Light brownish-gray, damp, loose to medium dense, SILTY SAND (SM), with minor plastic trash.						
2–4		**Topsoil:** Light to medium brown, moist, medium dense, SILTY SAND (SM), fine to medium-grained.	Cal		55			
4		**Alluvium (Qal):** Light gray, moist, medium dense, POORLY-GRADED SAND (SP), medium to coarse-grained, friable, with iron staining.	Cal		33			
10			Cal		18			
15			Cal		42			
18		At 18 feet becomes very moist, medium dense.						
19–20		At 19 feet becomes saturated.	SPT		15			

Boring continued on Plate No. 10.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT
4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	9

LOG OF TEST BORING NUMBER B-9 (Continued)

Date Excavated:	7/12/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	23½ feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
		Alluvium (Qal): Light to medium gray, very moist, loose, POORLY GRADED SAND (SP), medium to coarse-grained, friable.						
22			SPT		8			
		Medium to dark gray, very moist, loose, SILTY SAND (SM), very fine to fine-grained, micaceous.						
24		At 23½ feet becomes saturated.	SPT		8			SA
26								
28		Medium gray, saturated, medium dense, SILTY SAND-POORLY-GRADED SAND (SM-SP), medium-grained, slightly micaceous, friable.						
30			SPT		14			
32								
34			SPT		16			SA
36								
38								
40			SPT*		23			

Boring continued on Plate No. 14.

* No sample recovery.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT
4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	13

LOG OF TEST BORING NUMBER B-9 (Continued)

Date Excavated:	7/12/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	23½ feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
42, 44		**Alluvium (Qal):** Medium gray, saturated, medium dense, , SILTY SAND-POORLY-GRADED SAND (SM-SP), medium-grained, friable, slightly micaceous.	SPT		10			SA
46, 48, 50, 52		Medium to dark gray, saturated, medium dense, SILTY SAND-SANDY SILT (SM-ML), very fine to fine-grained, micaceous.	SPT		12			
54, 56, 58		Light to medium gray, saturated, medium dense to dense, SILTY SAND-POORLY-GRADED SAND (SM-SP), medium to coarse-grained, slightly micaceous.	SPT		29			SA
60		Boring properly backfilled wth 20.5 cubic feet of bentonite grout mix.	SPT*		32			

Boring terminated at 60 feet.

* No sample recovery.

CHRISTIAN WHEELER ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	14

LOG OF TEST BORING NUMBER B-9

Date Excavated:	7/12/2005	Logged by:	AKN
Equipment:	IR-300	Project Manager:	CHC
Existing Elevation:	N/A	Depth to Water:	23½ feet
Finish Elevation:	N/A	Drive Weight:	140 lbs./30"

DEPTH (feet)	GRAPHIC LOG	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: SAMPLE TYPE	SAMPLES: BULK	PENETRATION (blows/foot)	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TESTS
0–2		**Artificial Fill (Qaf):** Medium grayish-brown, damp, loose, SILTY SAND (SM), with trace gravels. At 1 foot becomes moist.						
2–4		**Topsoil:** Medium grayish-brown, moist, medium dense, SILTY SAND (SM).	Cal		19			
4–6		**Alluvium (Qal):** Medium to dark gray, moist, medium dense, SILTY SAND (SM), very fine to fine-grained, micaceous.	Cal		17			
6–9		Medium gray, moist, medium dense, SILTY SAND-POORLY-GRADED SAND (SM-SP), medium-grained, slightly micaceous, friable.						
9–13		Medium to dark gray, moist, loose, SILTY SAND-SANDY SILT (SM-ML), very fine to fine-grained, micaceous.	Cal		12			
13–20		Light to medium gray, moist, medium dense, POORLY GRADED SAND (SP), medium to coarse-grained, friable.	Cal		25			
20			Cal*		24			

Boring continued on Plate No. 13.

* No sample recovery.

CHRISTIAN WHEELER
ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT

4617 North River Ranch Road, Oceanside, California

BY:	HF	DATE:	July 2005
JOB NO. :	2050567	PLATE NO.:	12

LABORATORY TEST RESULTS

PROPOSED NAGATA RANCH RESIDENTIAL DEVELOPMENT

4617 NORTH RIVER ROAD

OCEANSIDE, CALIFORNIA

MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT (ASTM D1557)

Sample Location	**Boring B-1 @ 3'-10'**	**Boring B-4 @ 1½'-10'**	**Boring B-7 @ 0'-3½'**
Sample Description	Dark brown, silty sand	Gray, silty sand	Brown, silty sand
Maximum Density	114.2 pcf	113.3 pcf	120.3 pcf
Optimum Moisture	10.5 %	13.6 %	10.6 %

DIRECT SHEAR (ASTM D3080)

Sample Location	**Boring B-4 @ 1½'-10'**
Sample Type	Remolded to 90 %
Friction Angle	30 °
Cohesion	25 psf

GRAIN SIZE DISTRIBUTION (ASTM D422)

Sample Location	**Boring B-1 @ 0'-3'**	**Boring B-1 @ 3'-10'**	**Boring B-3 @ 3'-10'**
Sieve Size	*Percent Passing*	*Percent Passing*	*Percent Passing*
½"	100		
3/8"	99	100	100
#4	99	100	99
#8	98	98	97
#16	94	89	82
#30	78	58	52
#50	40	26	18
#100	14	10	6
#200	4	3	3

Sample Location	**Boring B-4@ 1½-10'**	**Boring B-7 @ 0'-3½'**	**Boring B-7 @ 3½'-10'**
Sieve Size	*Percent Passing*	*Percent Passing*	*Percent Passing*
3/8"	100	100	
#4	100	99	100
#8	99	99	99
#16	92	97	94
#30	70	86	75
#50	31	52	34
#100	10	23	11
#200	4	13	5

LABORATORY TEST RESULTS (Continued)

GRAIN SIZE DISTRIBUTION (ASTM D422)

Sample Location	**Boring B-8@ 24-25'**	**Boring B-8 @ 39'-40'**	**Boring B-8 @ 49'-50'**
Sieve Size	*Percent Passing*	*Percent Passing*	*Percent Passing*
3/8"	100	100	
#4	100	100	100
#8	100	99	100
#16	97	95	98
#30	82	82	92
#50	35	49	72
#100	12	17	42
#200	6	6	23

Sample Location	**Boring B-8@ 54-55'**	**Boring B-8@ 59-60'**	**Boring B-9 @ 24'-25'**
Sieve Size	*Percent Passing*	*Percent Passing*	*Percent Passing*
3/8"	100	100	
#4	100	100	100
#8	97	97	100
#16	82	84	100
#30	54	59	99
#50	22	31	92
#100	9	15	66
#200	4	8	45

Sample Location	**Boring B-9 @ 34'-35'**	**Boring B-9@ 44-45'**
Sieve Size	*Percent Passing*	*Percent Passing*
3/8"		100
#4	100	99
#8	100	97
#16	99	89
#30	95	69
#50	64	36
#100	24	15
#200	10	7

SOLUBLE SULFATES (CALIFORNIA TEST 417)

Sample Location	**Boring B-1 @ 0'-3'**	**Boring B-1 @ 3'-10'**	**Boring B-4 @ 1½-10'**	**Boring B-7 @ 3½'-10**
Soluble Sulfate	0.009 % (SO_4)	0.007 % (SO_4)	0.005 % (SO_4)	0.007 % (SO_4)

RESISTANCE VALUE (CALIFORNIA TEST 301)

Sample Location	**Boring B-3@ 0'-3**	**Boring B-6 @ 0'-3.5'**
By Exudation	73	69
By Expansion	N/A	N/A
By Equilibrium	73	69

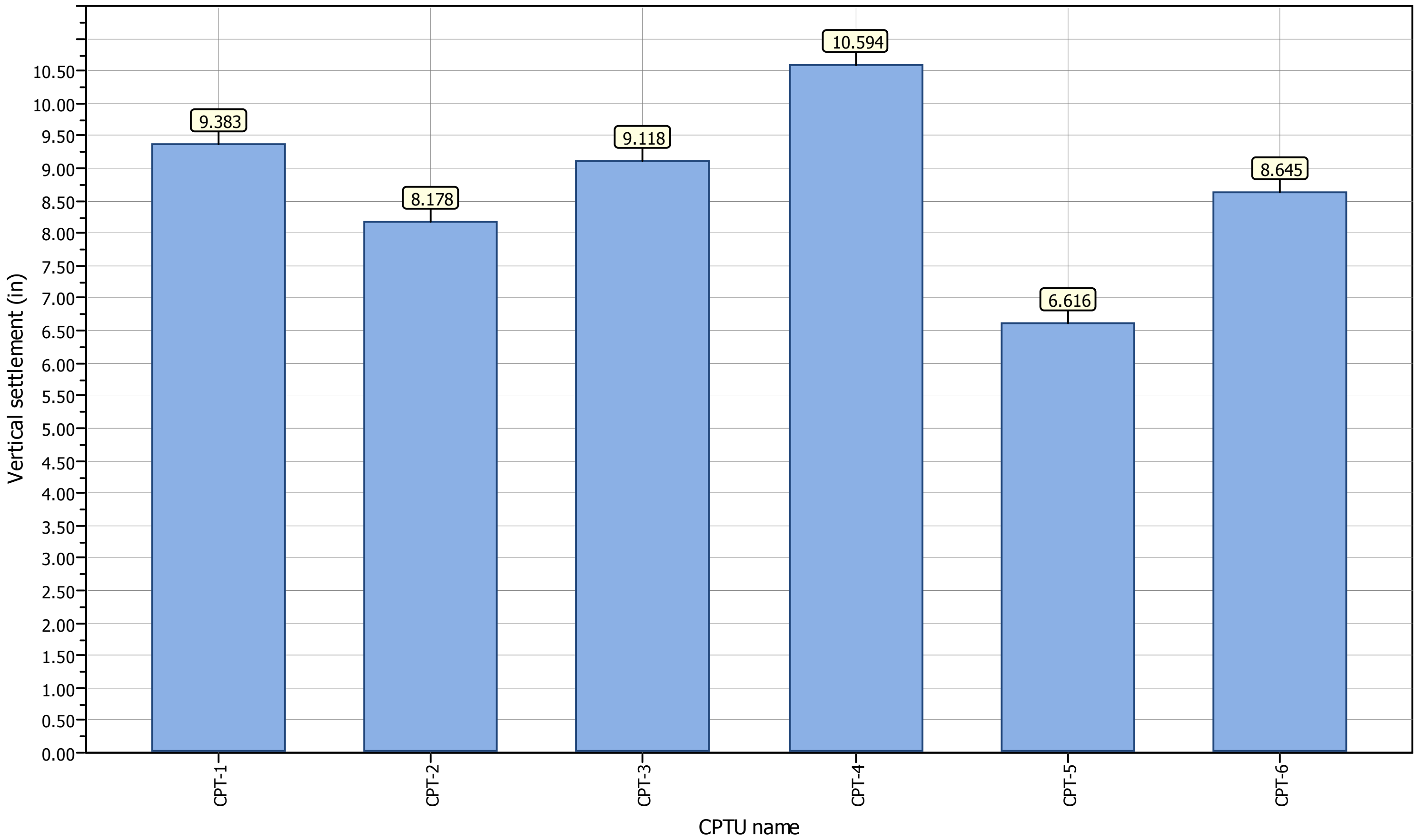
Appendix D

Liquefaction Analyses

Project title : Nagata Site

Location : 4617 North River Road, Oceanside

Overall vertical settlements report



Christian Wheeler Engineering
3980 Home Avenue
San Diego, CA 92105

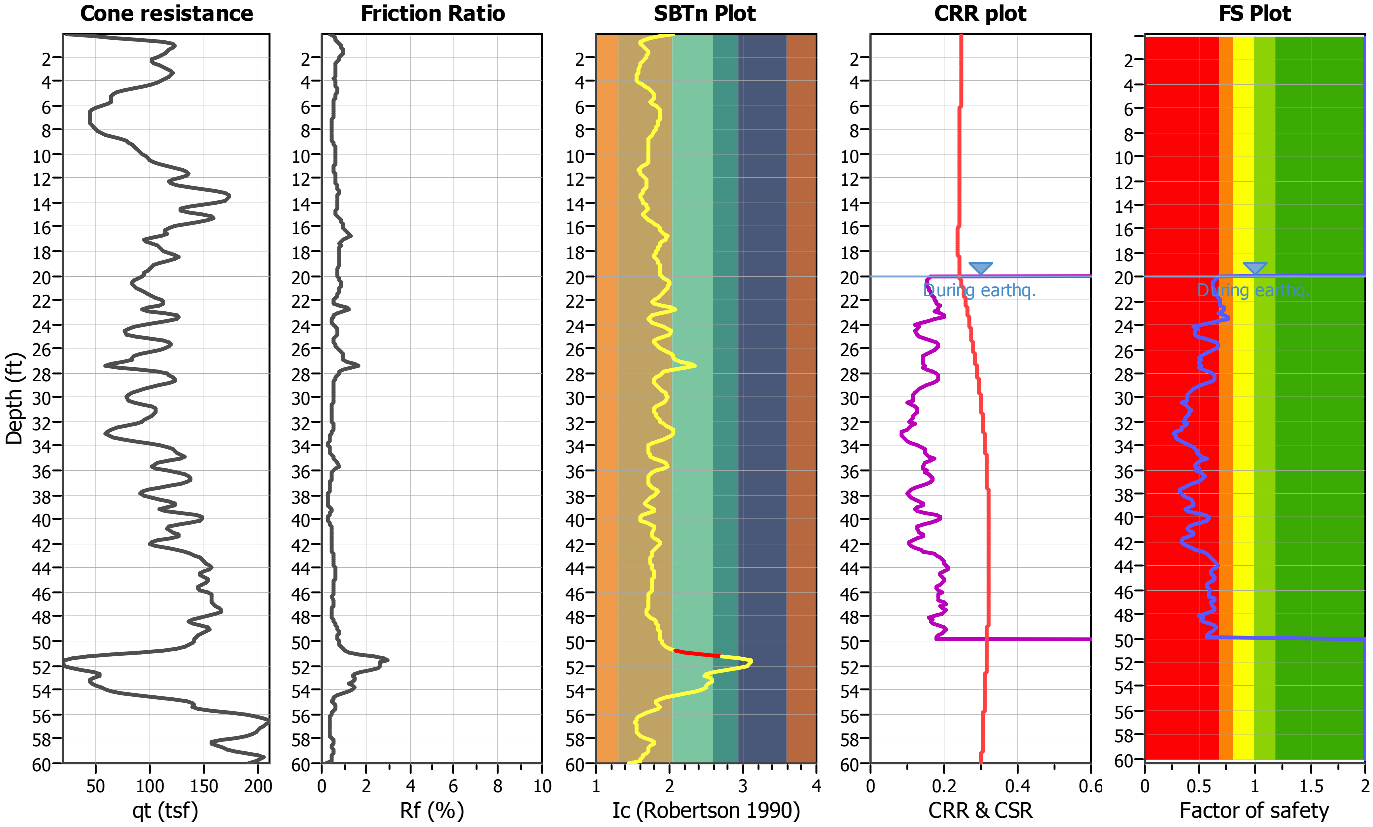
LIQUEFACTION ANALYSIS REPORT

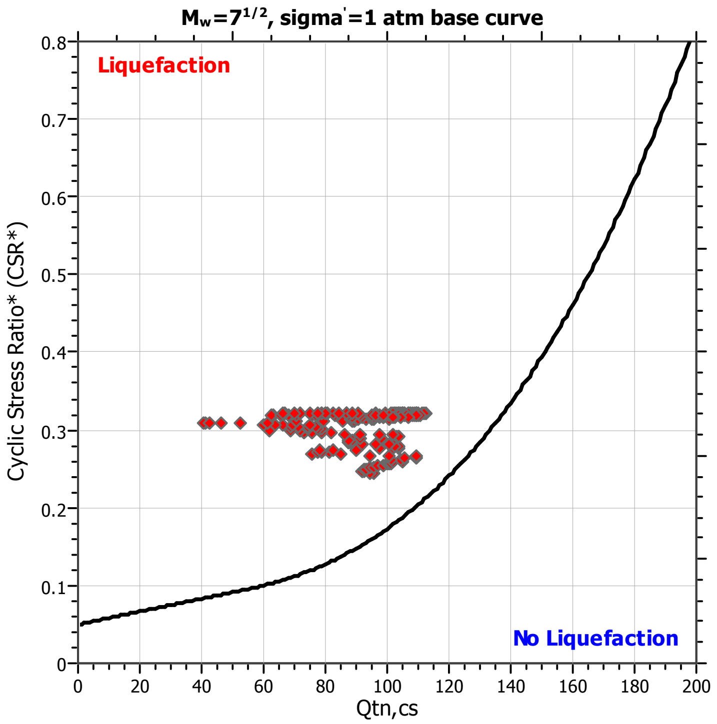
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

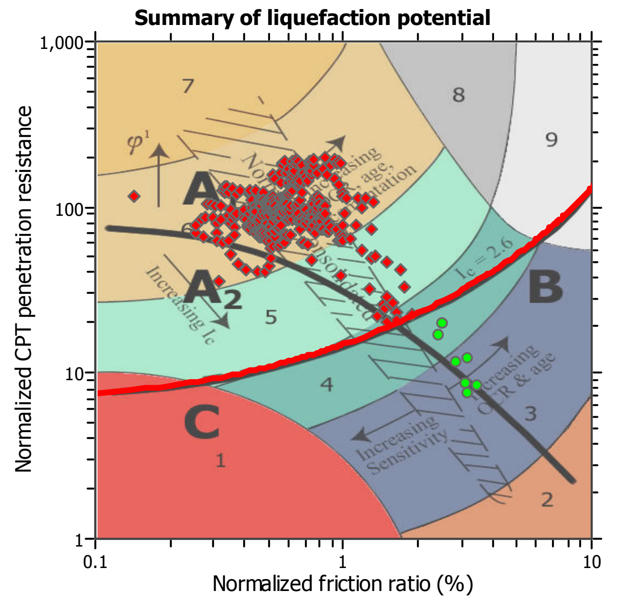
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	23.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

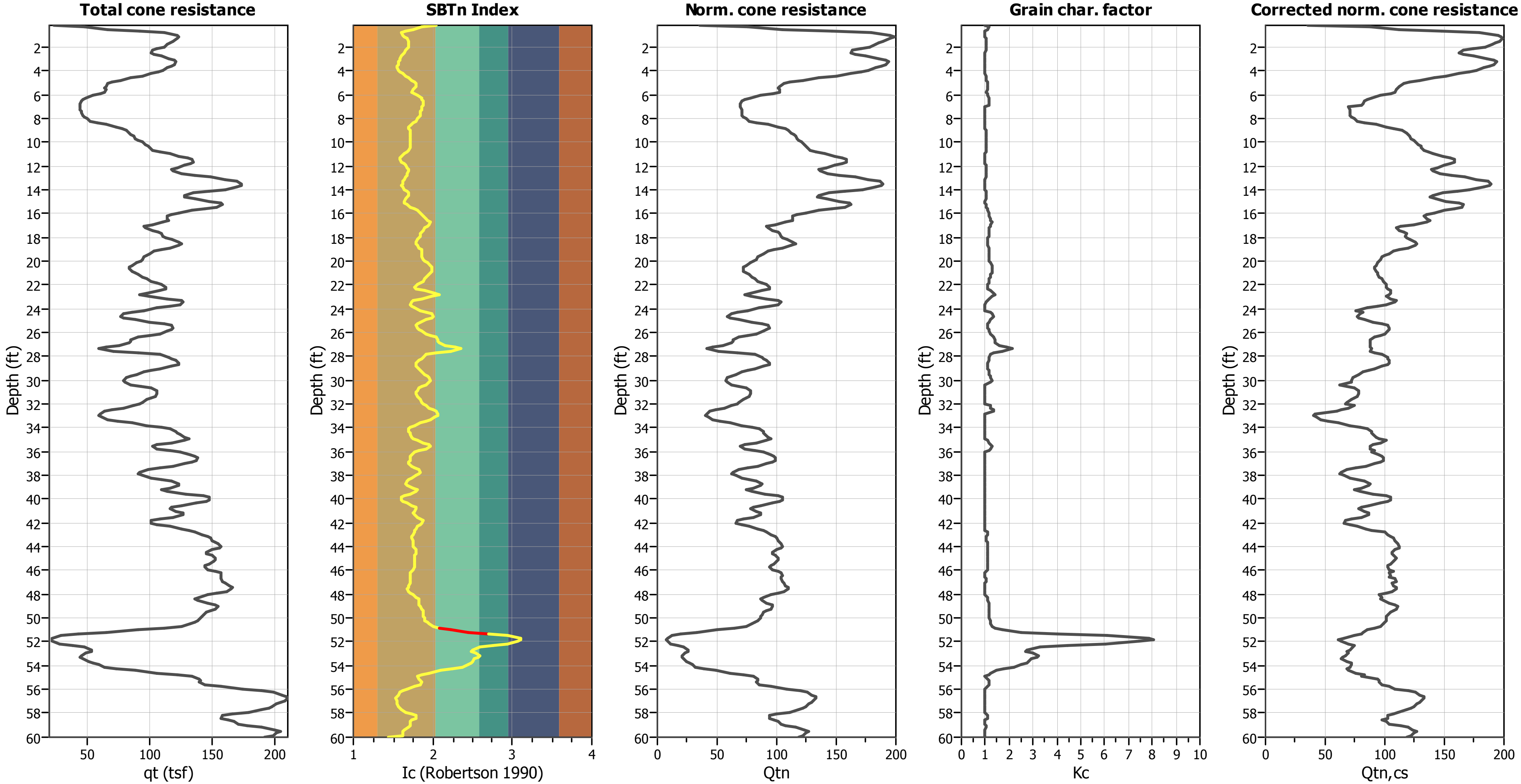






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

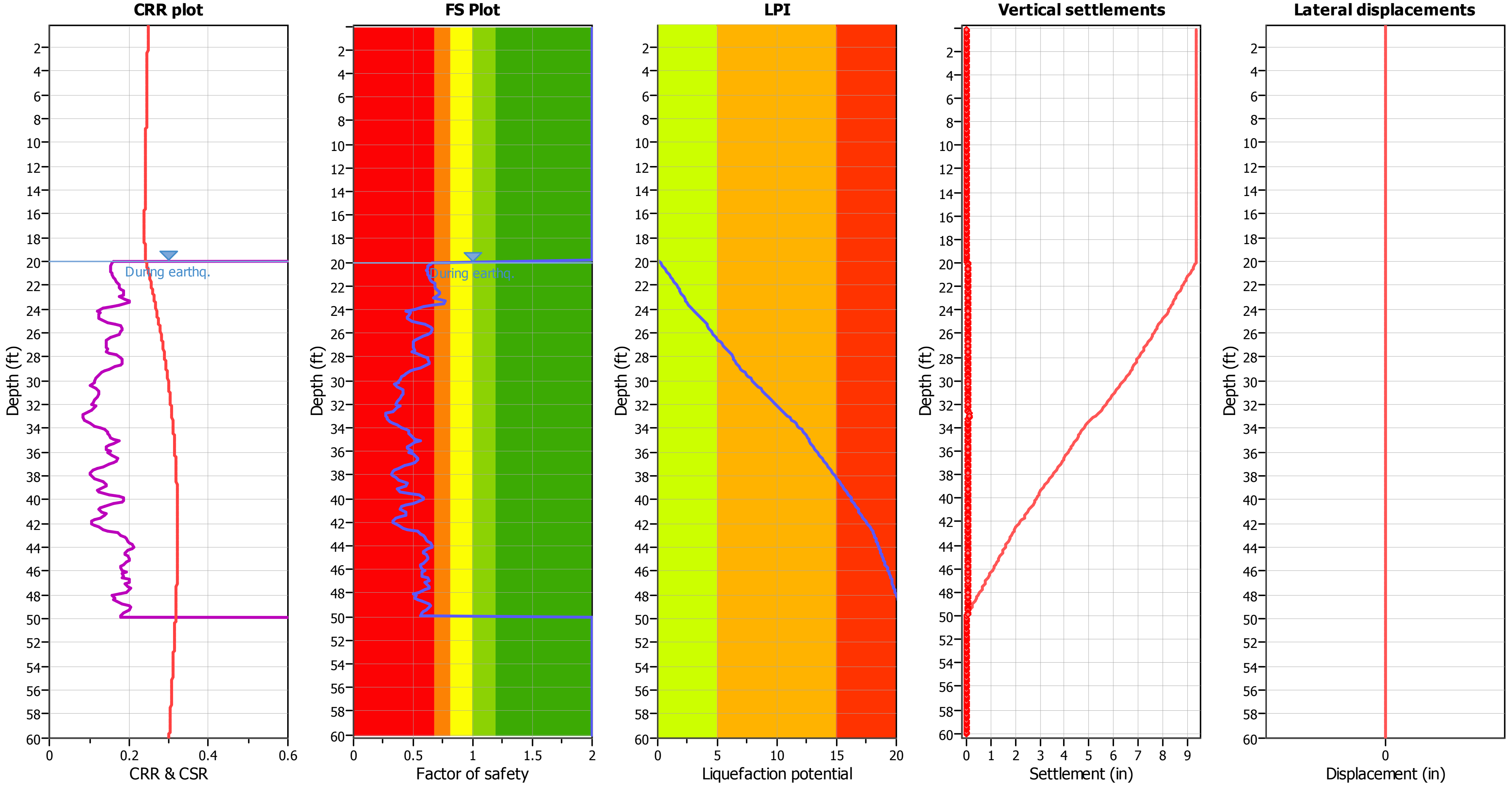
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

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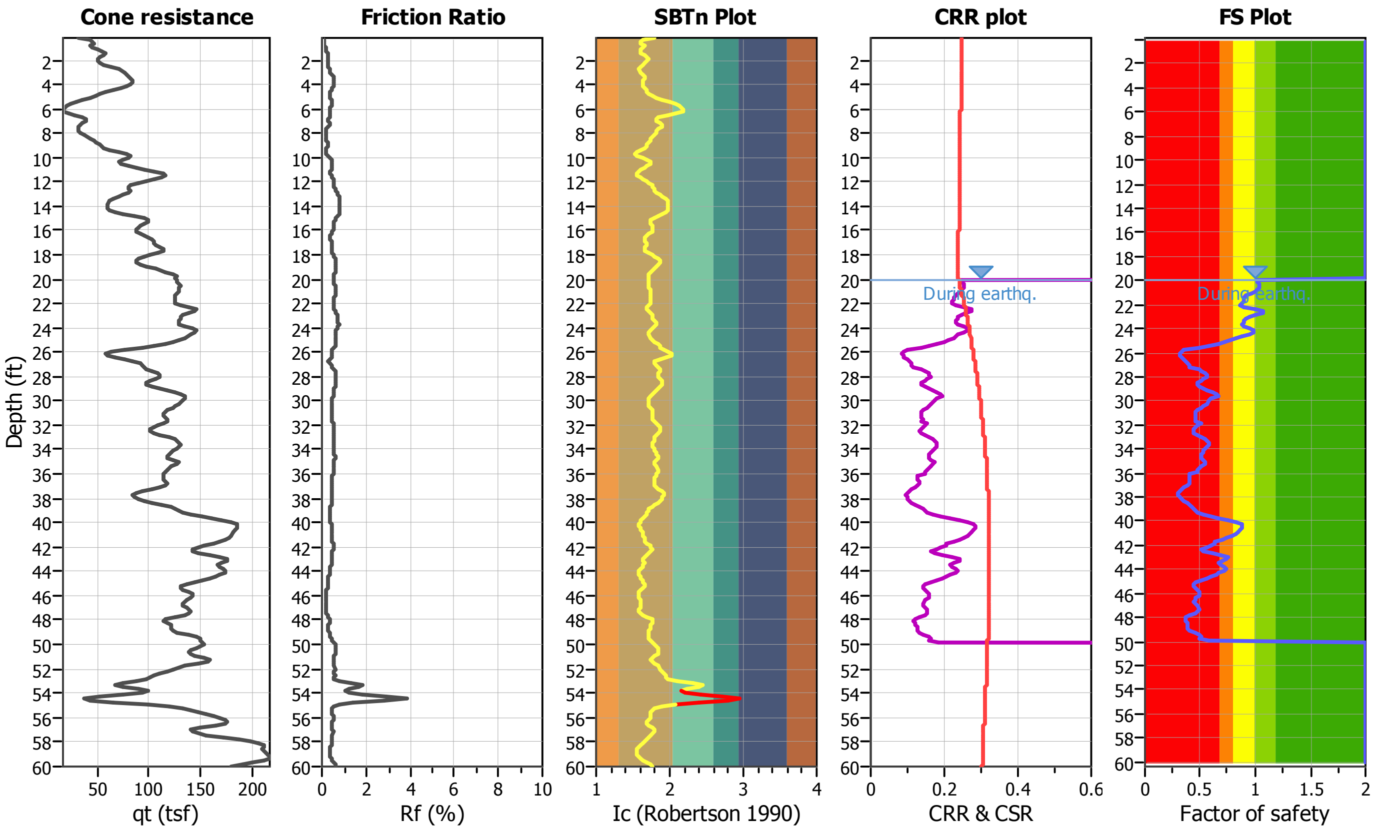
LIQUEFACTION ANALYSIS REPORT

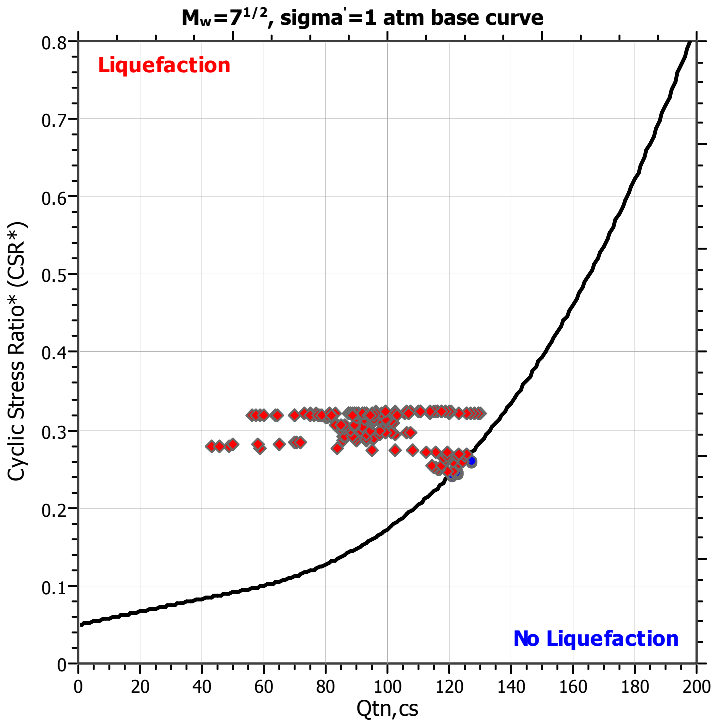
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

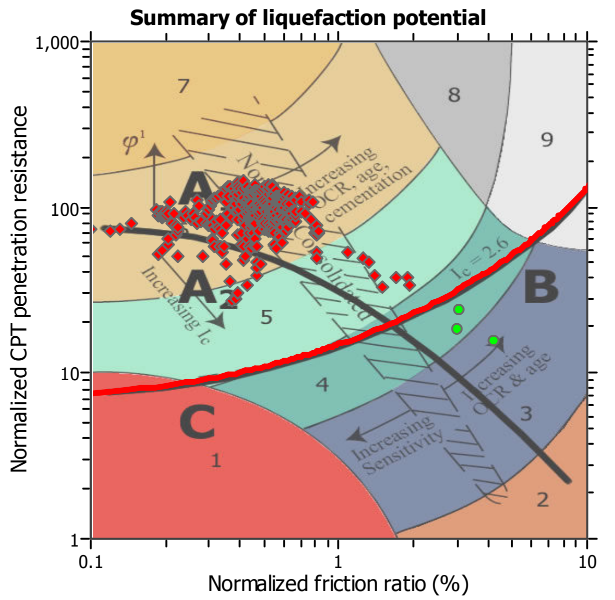
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	26.50 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

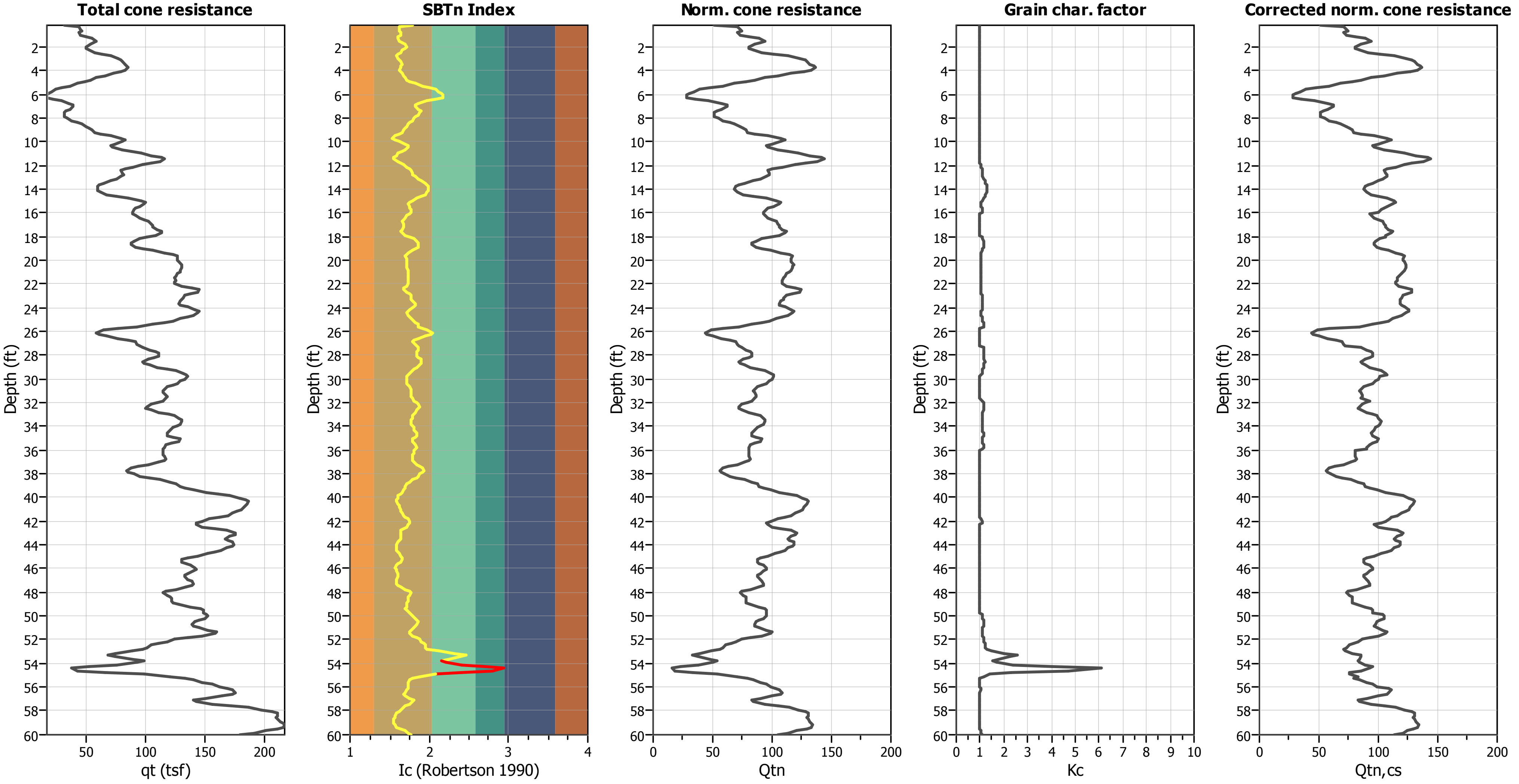






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

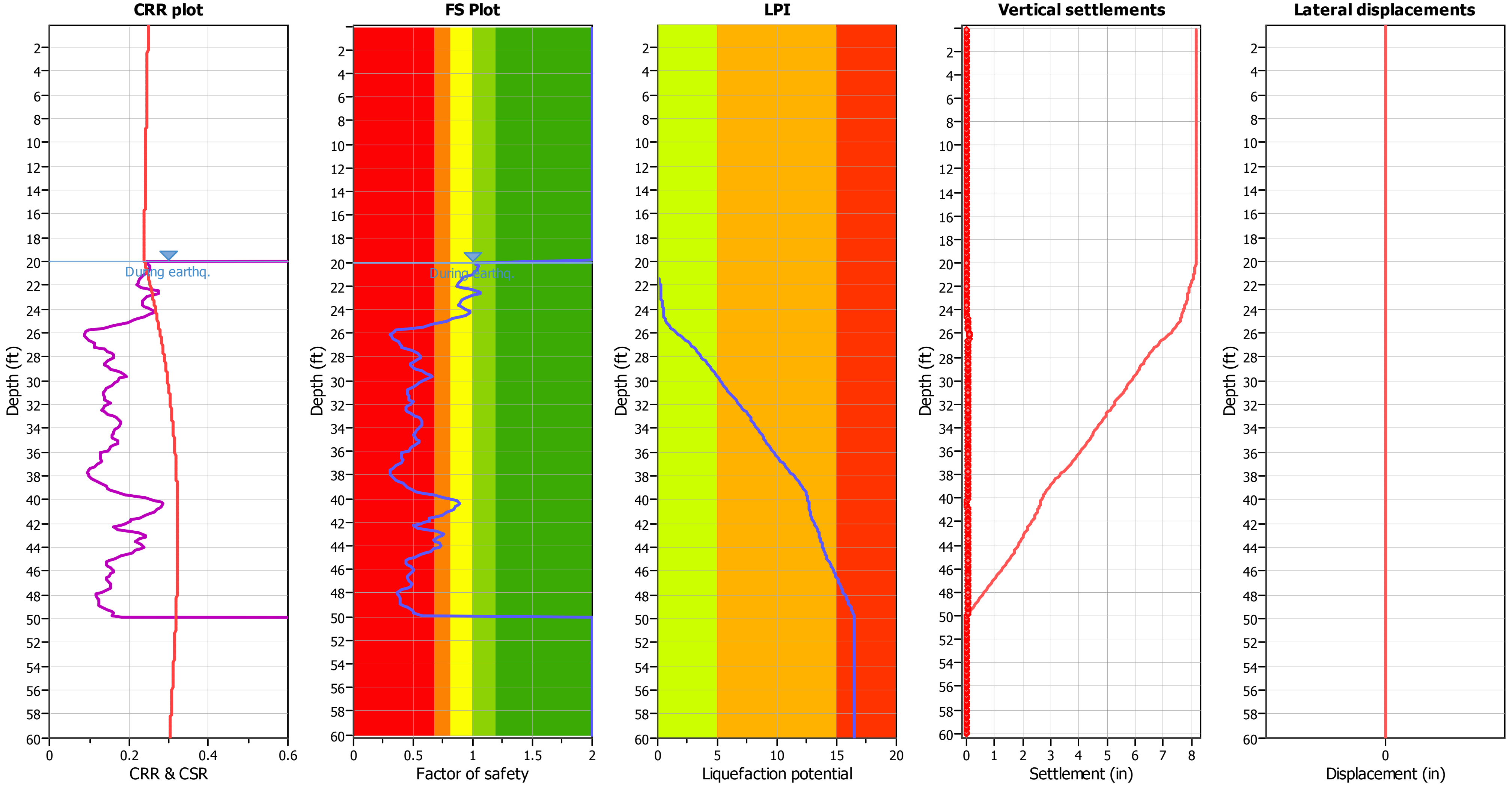
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

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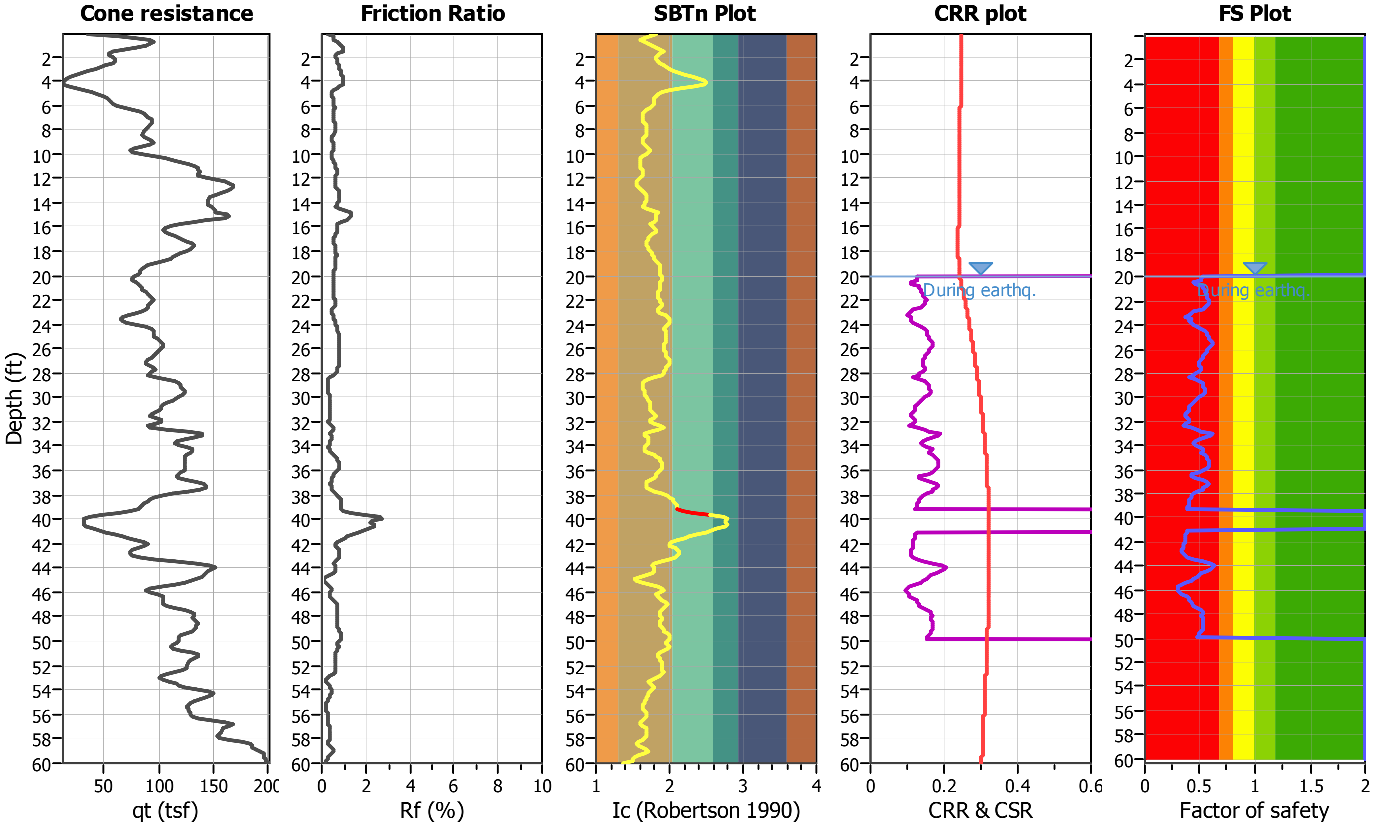
LIQUEFACTION ANALYSIS REPORT

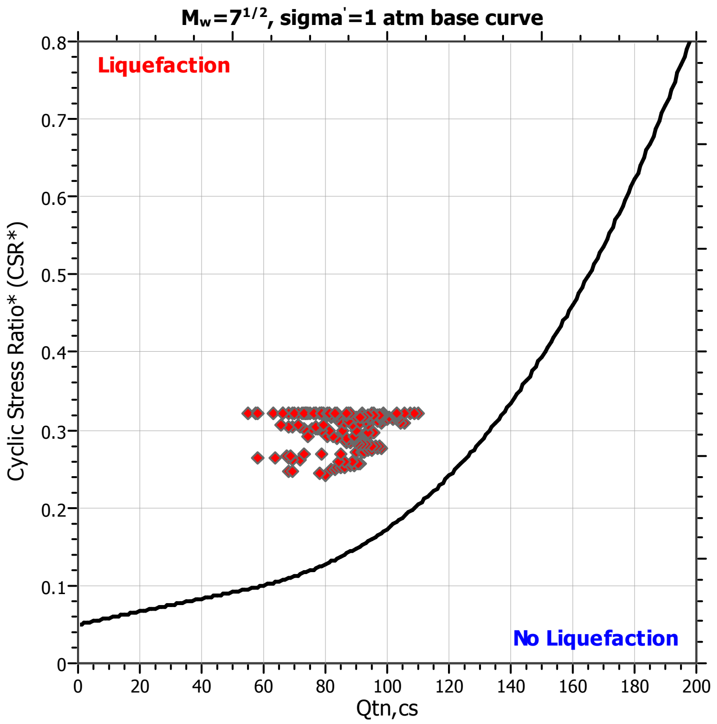
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

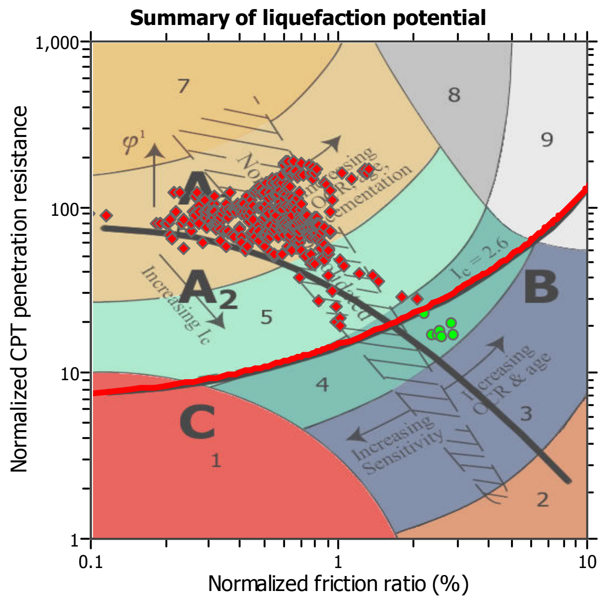
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	23.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

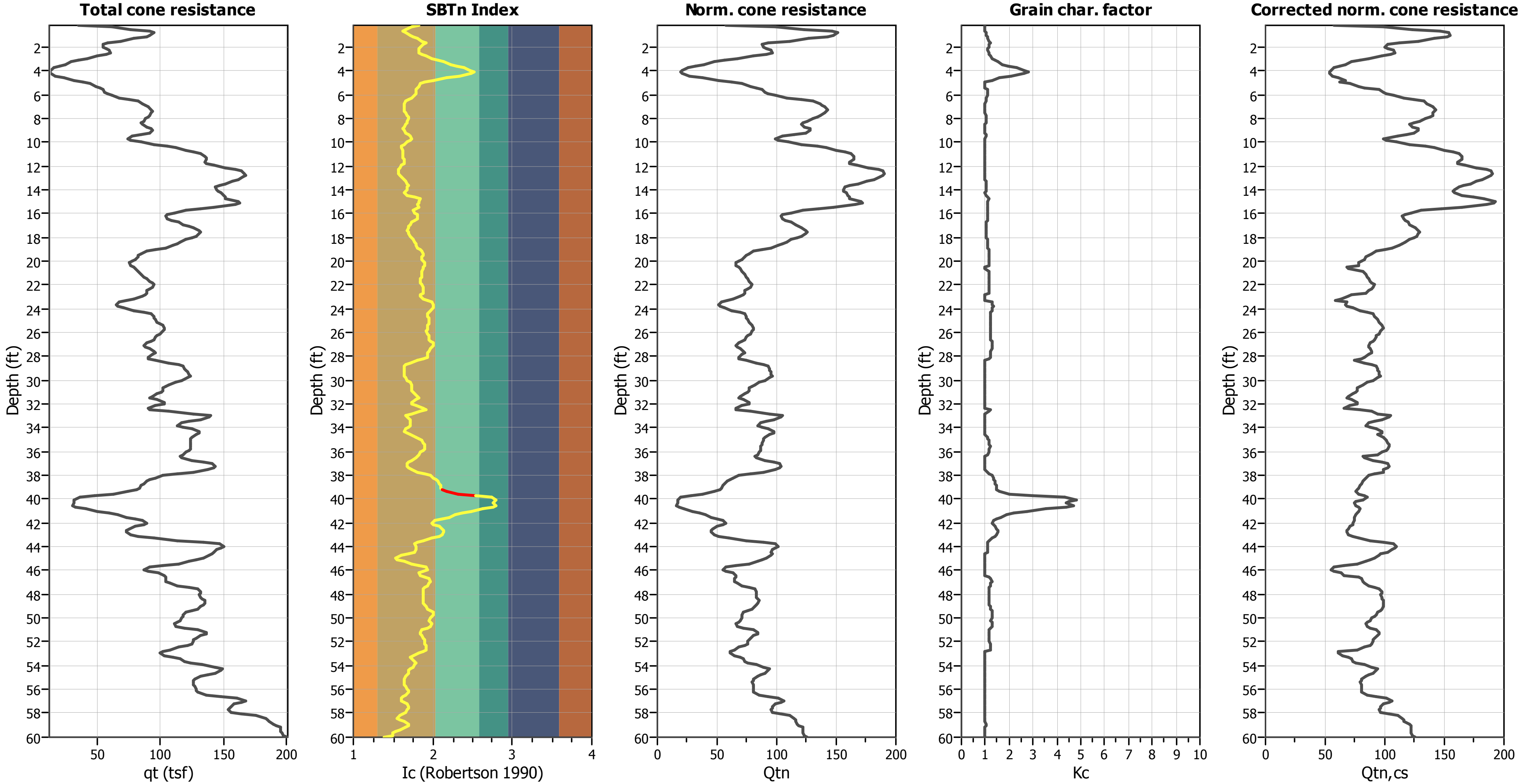






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

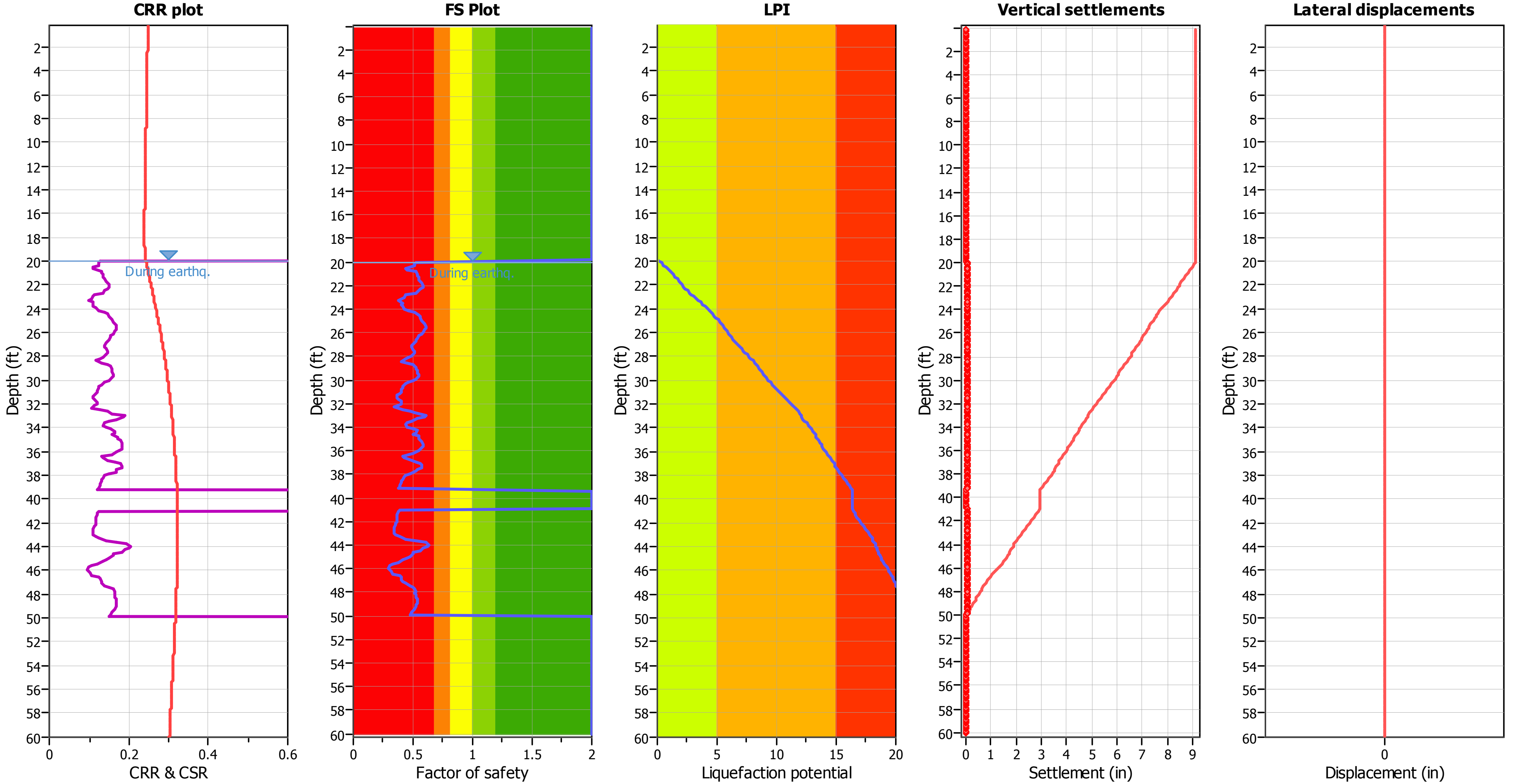
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

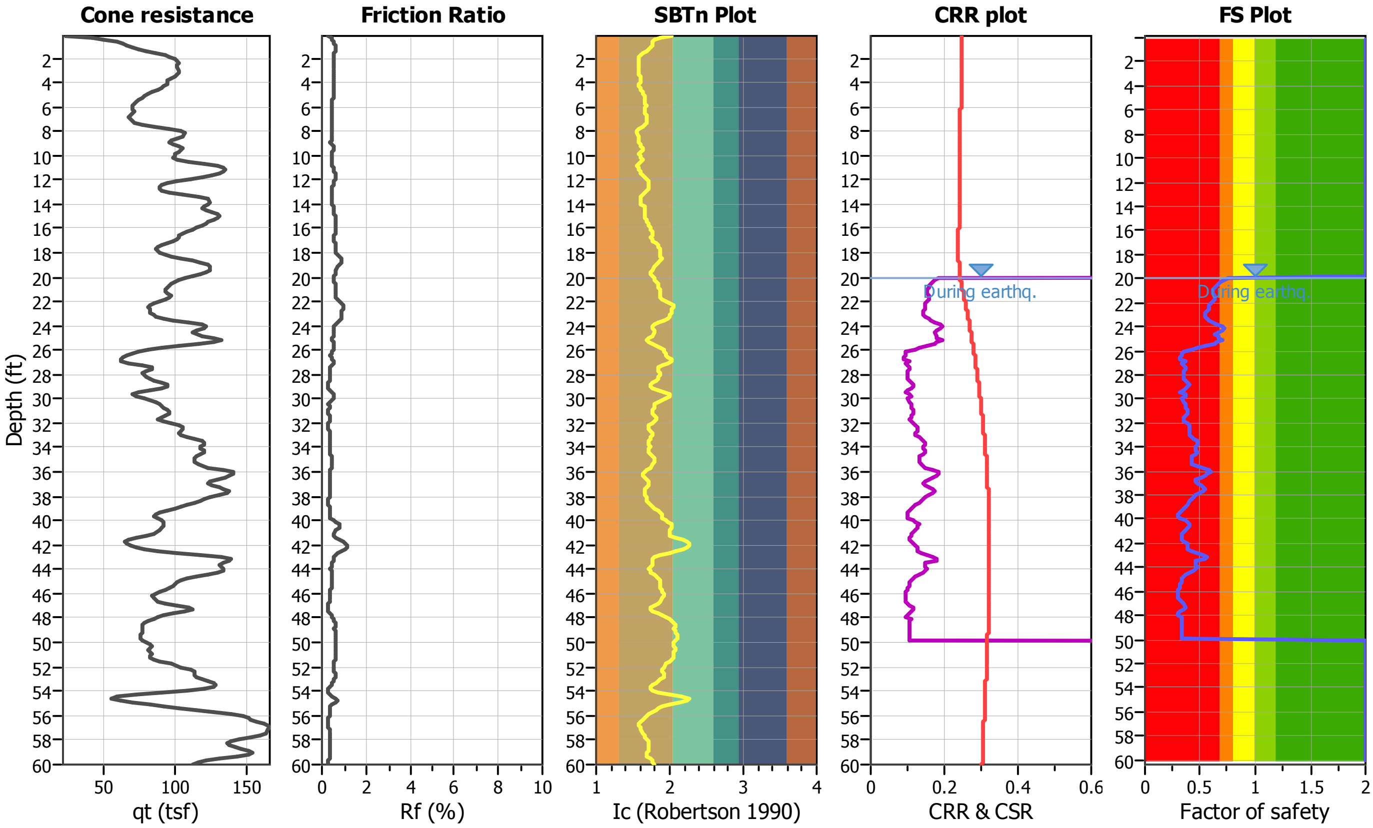
LIQUEFACTION ANALYSIS REPORT

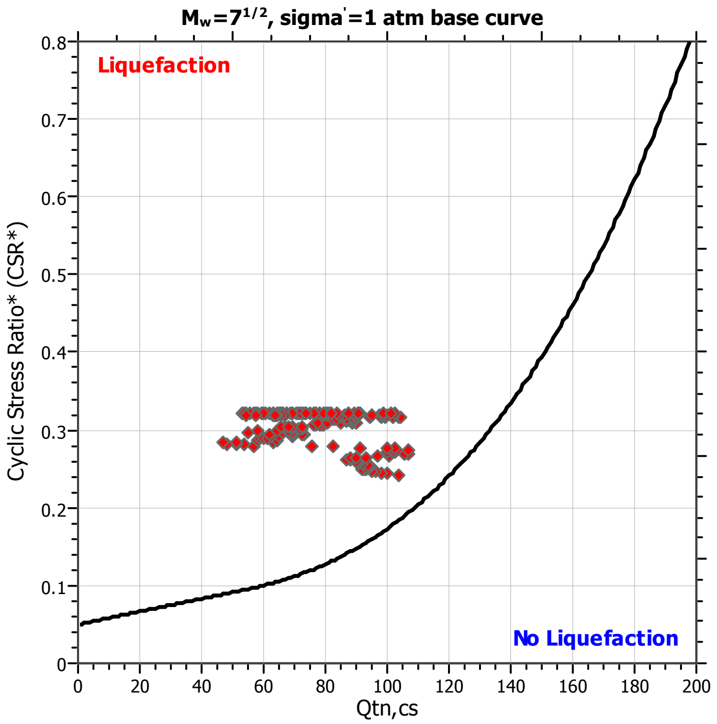
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

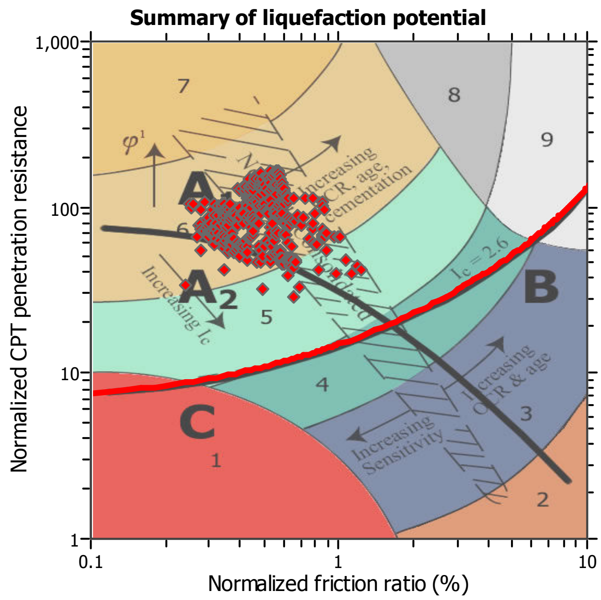
CPT file : CPT-4

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	23.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

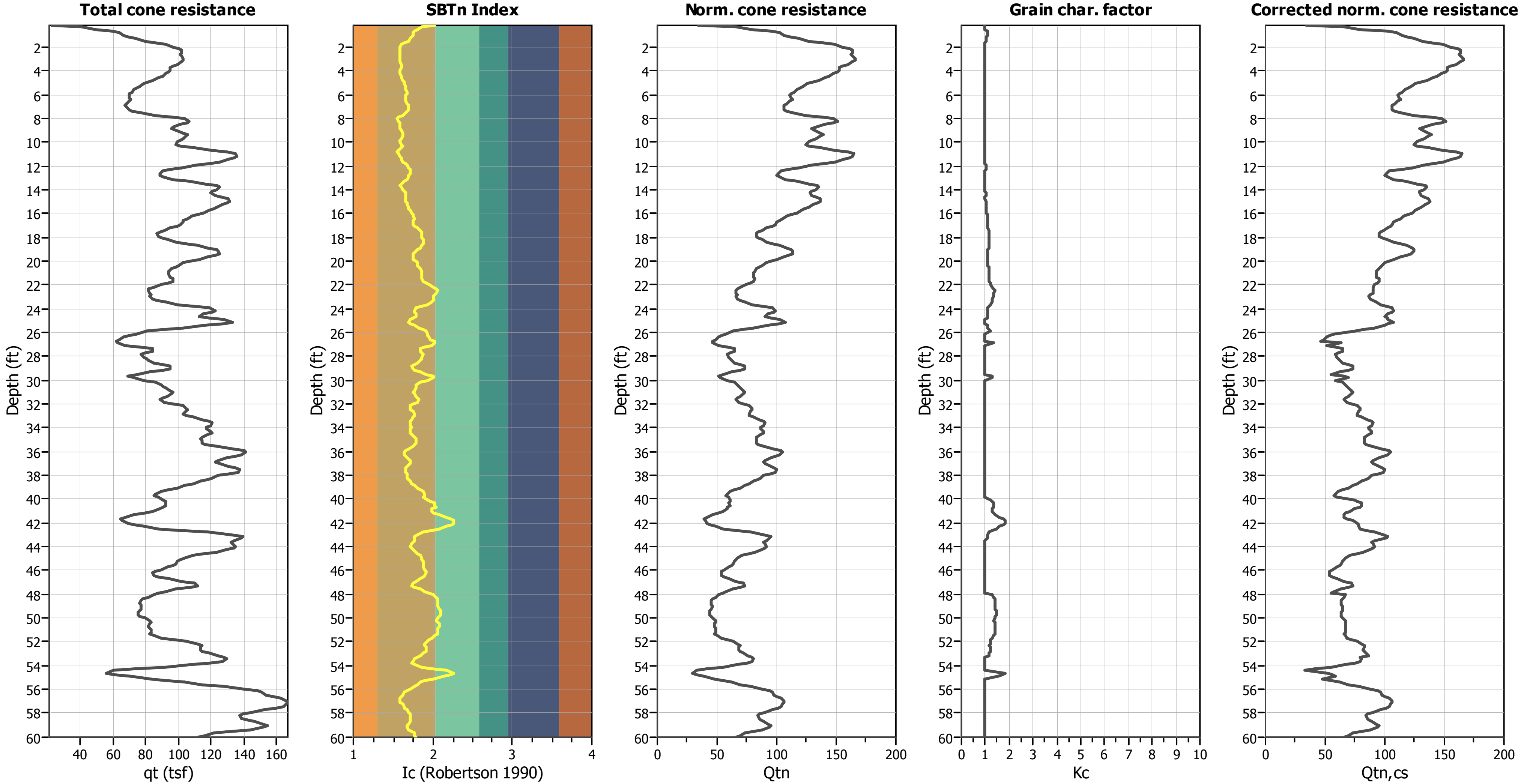






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

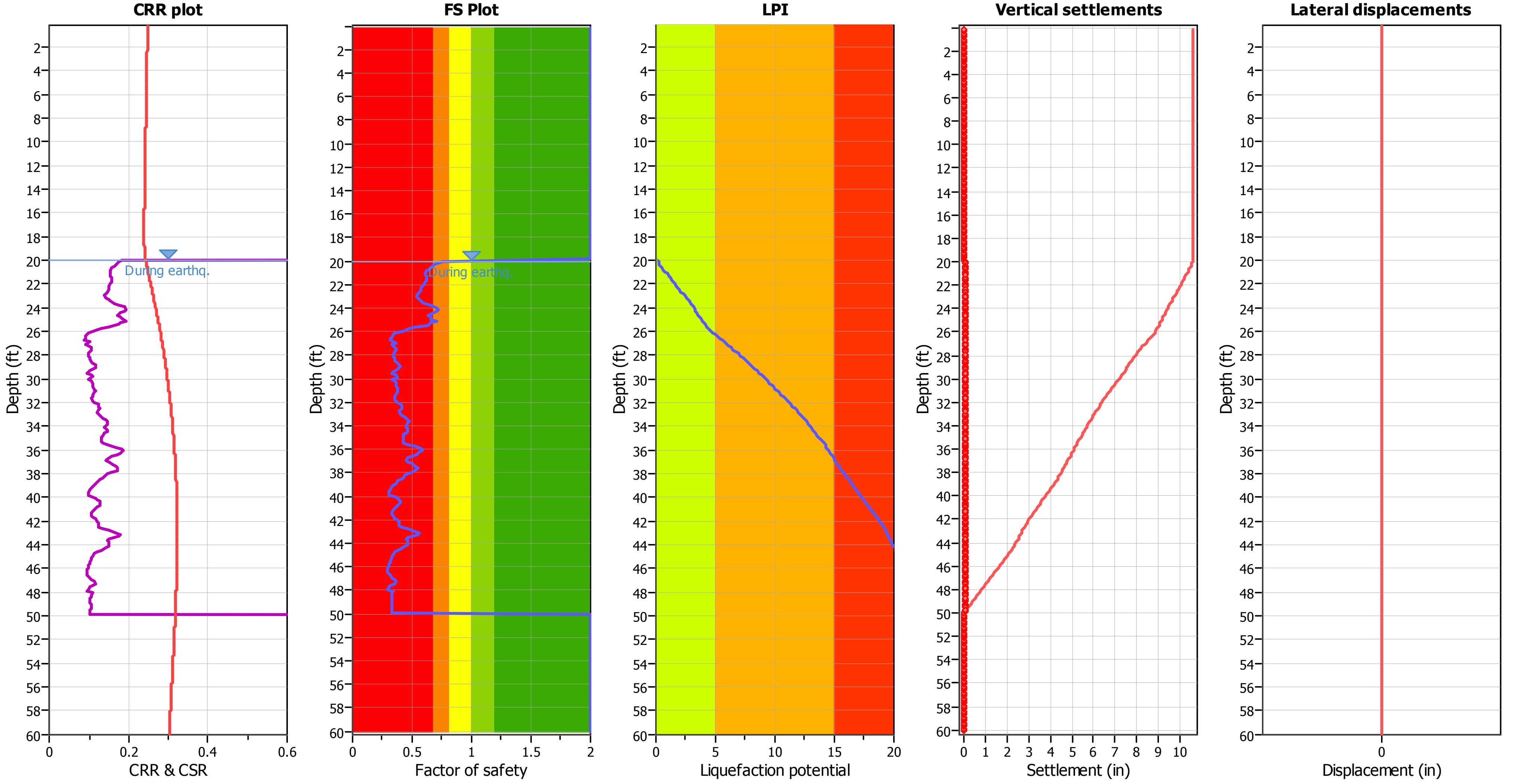
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

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Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Christian Wheeler Engineering
3980 Home Avenue
San Diego, CA 92105

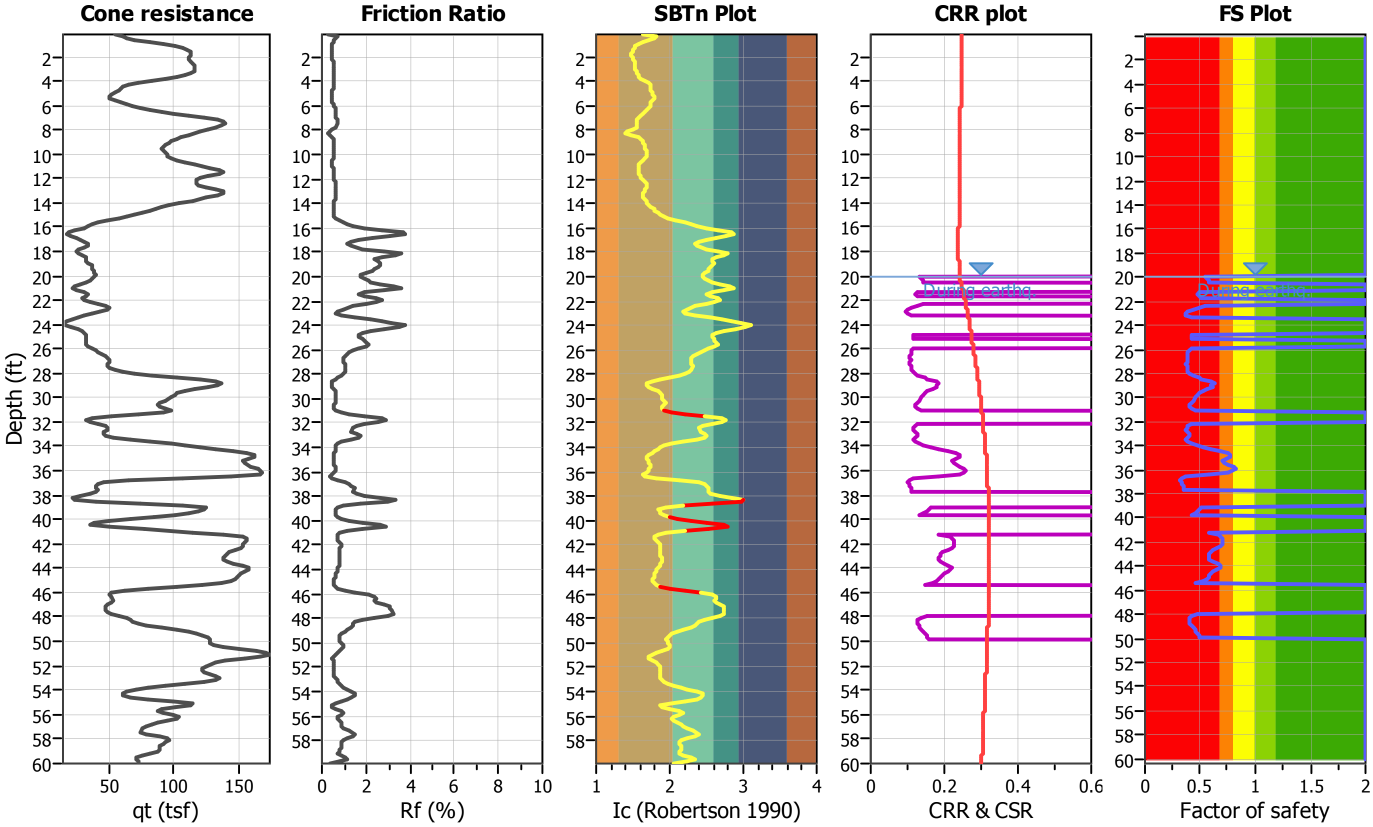
LIQUEFACTION ANALYSIS REPORT

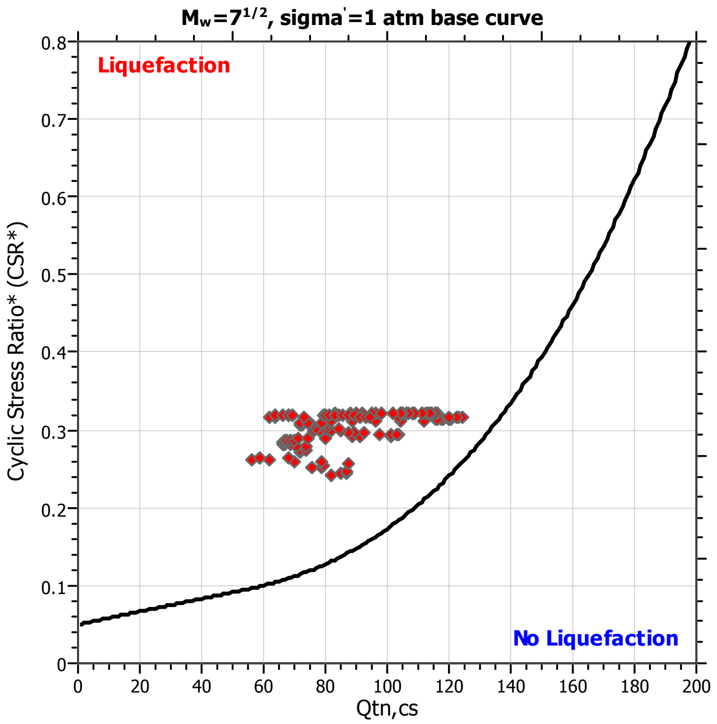
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

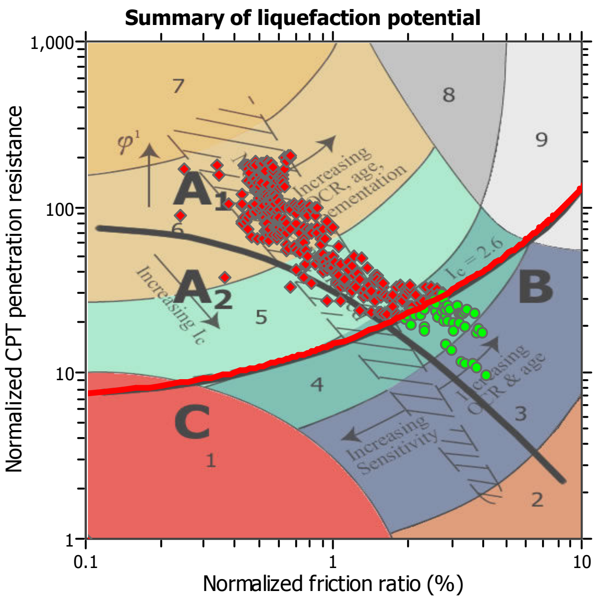
CPT file : CPT-5

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	25.50 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

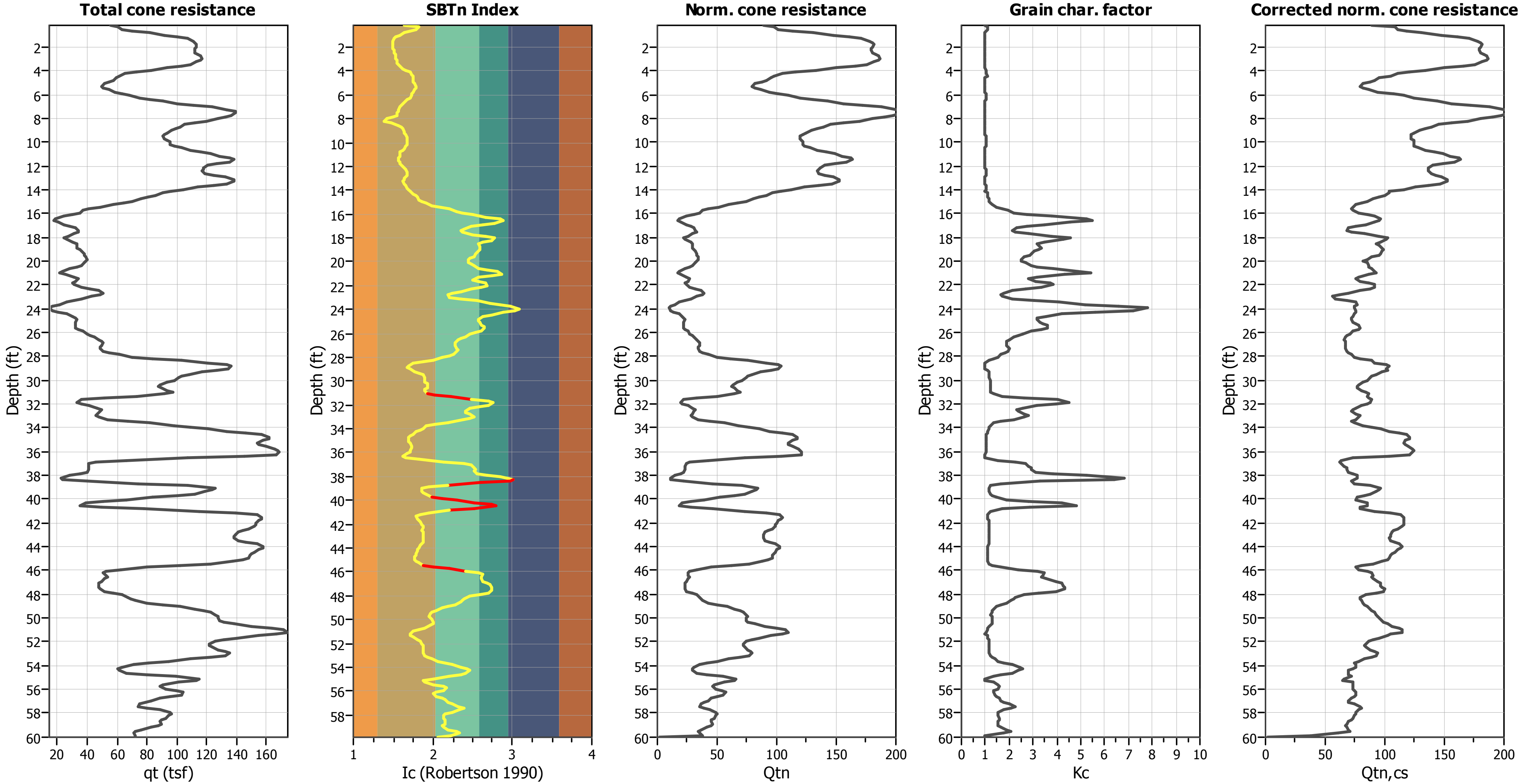






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

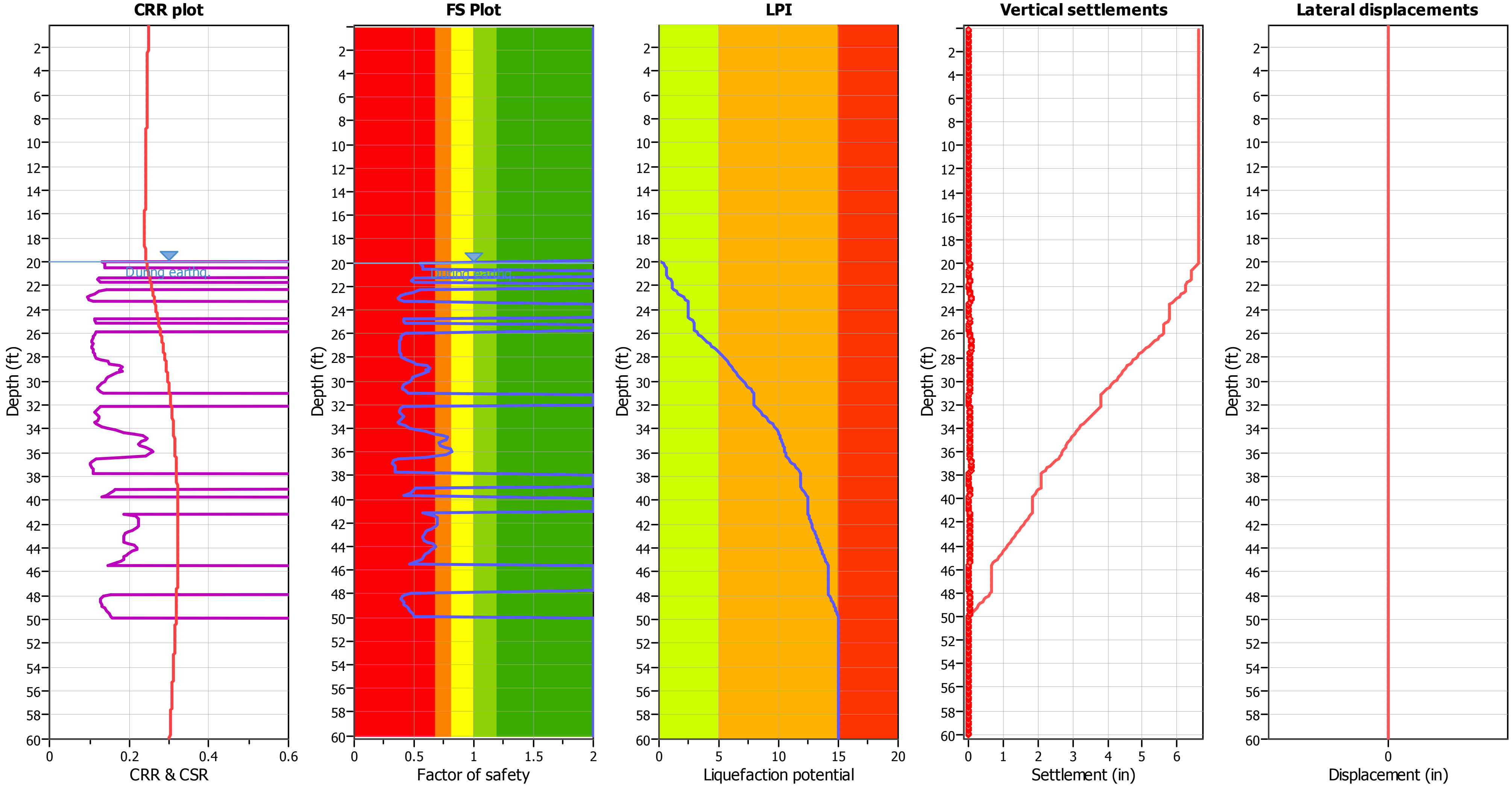
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.50 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	25.50 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Christian Wheeler Engineering
3980 Home Avenue
San Diego, CA 92105

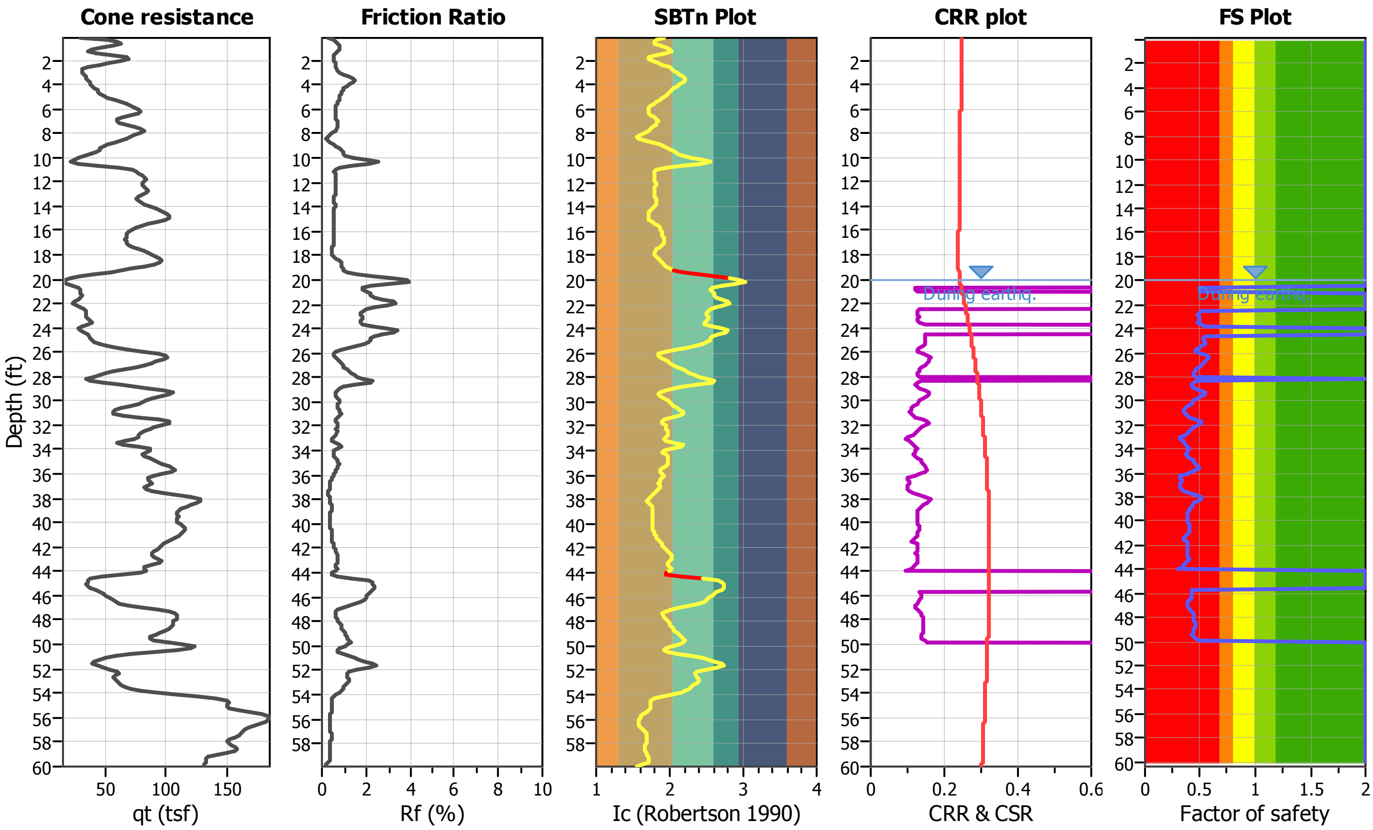
LIQUEFACTION ANALYSIS REPORT

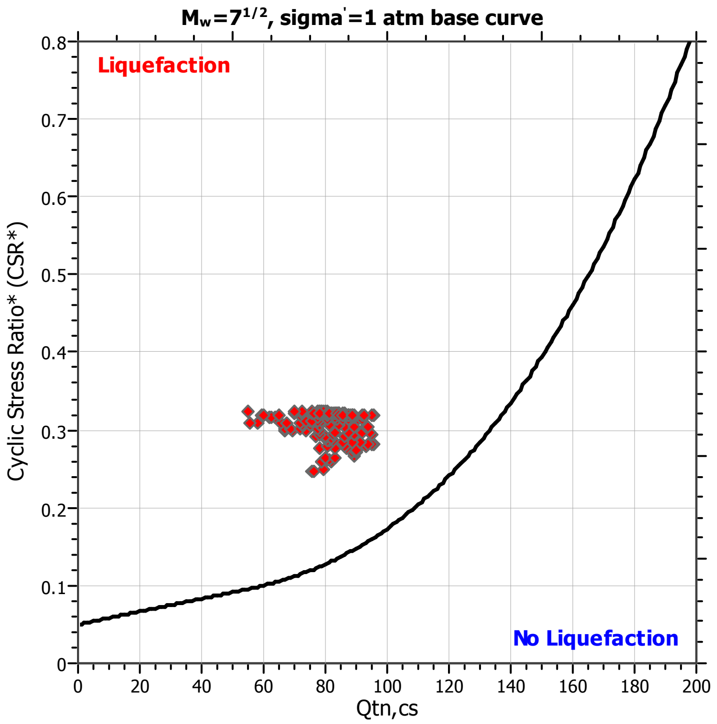
Project title : Nagata Site **Location : 4617 North River Road, Oceanside**

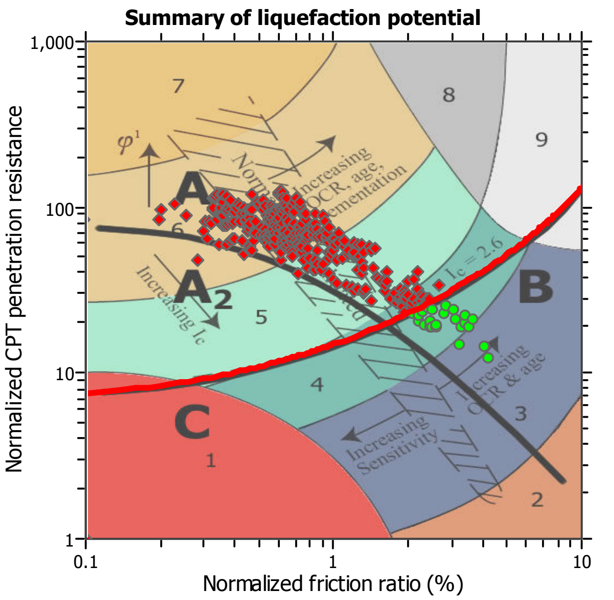
CPT file : CPT-6

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.40	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.44	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

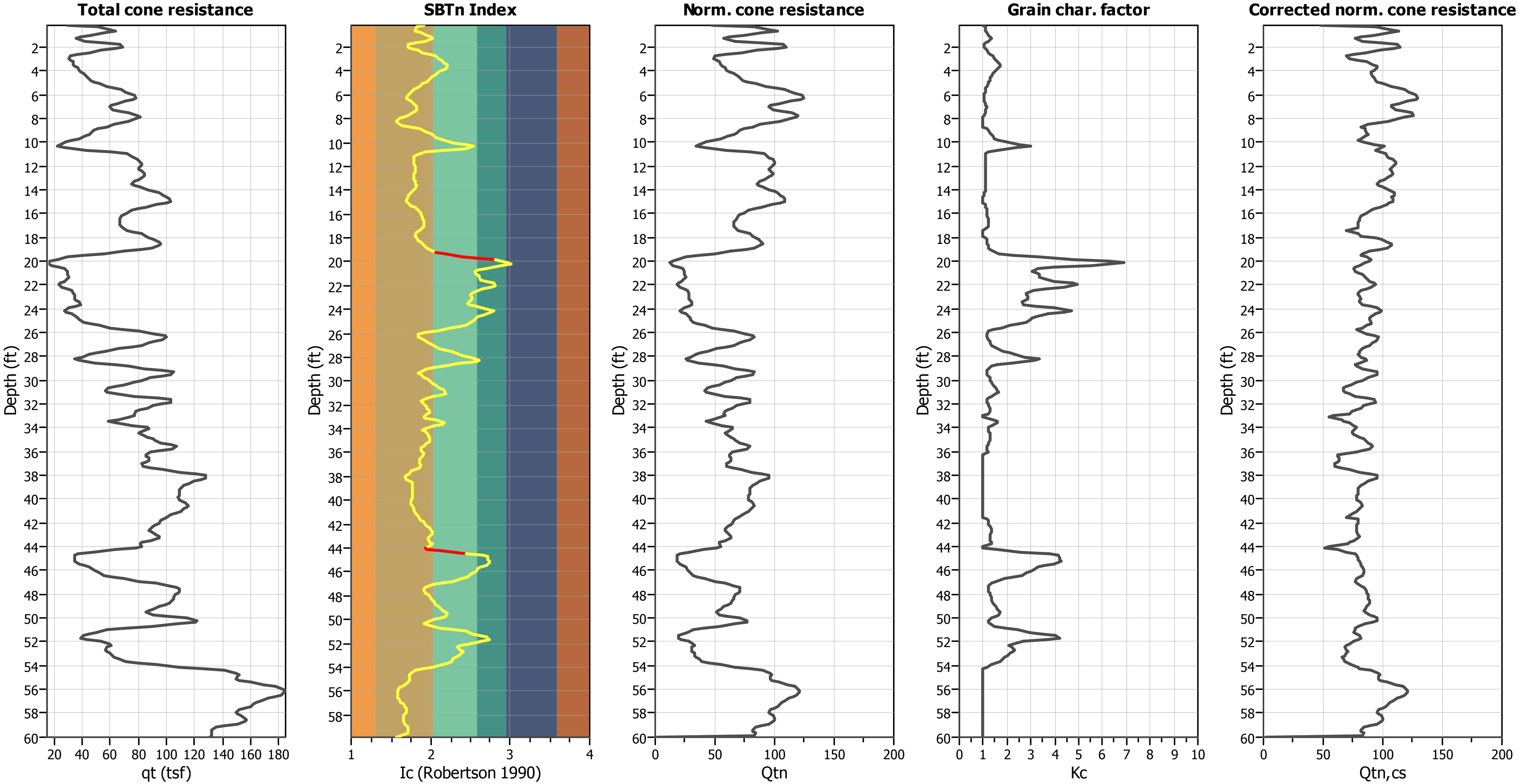






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

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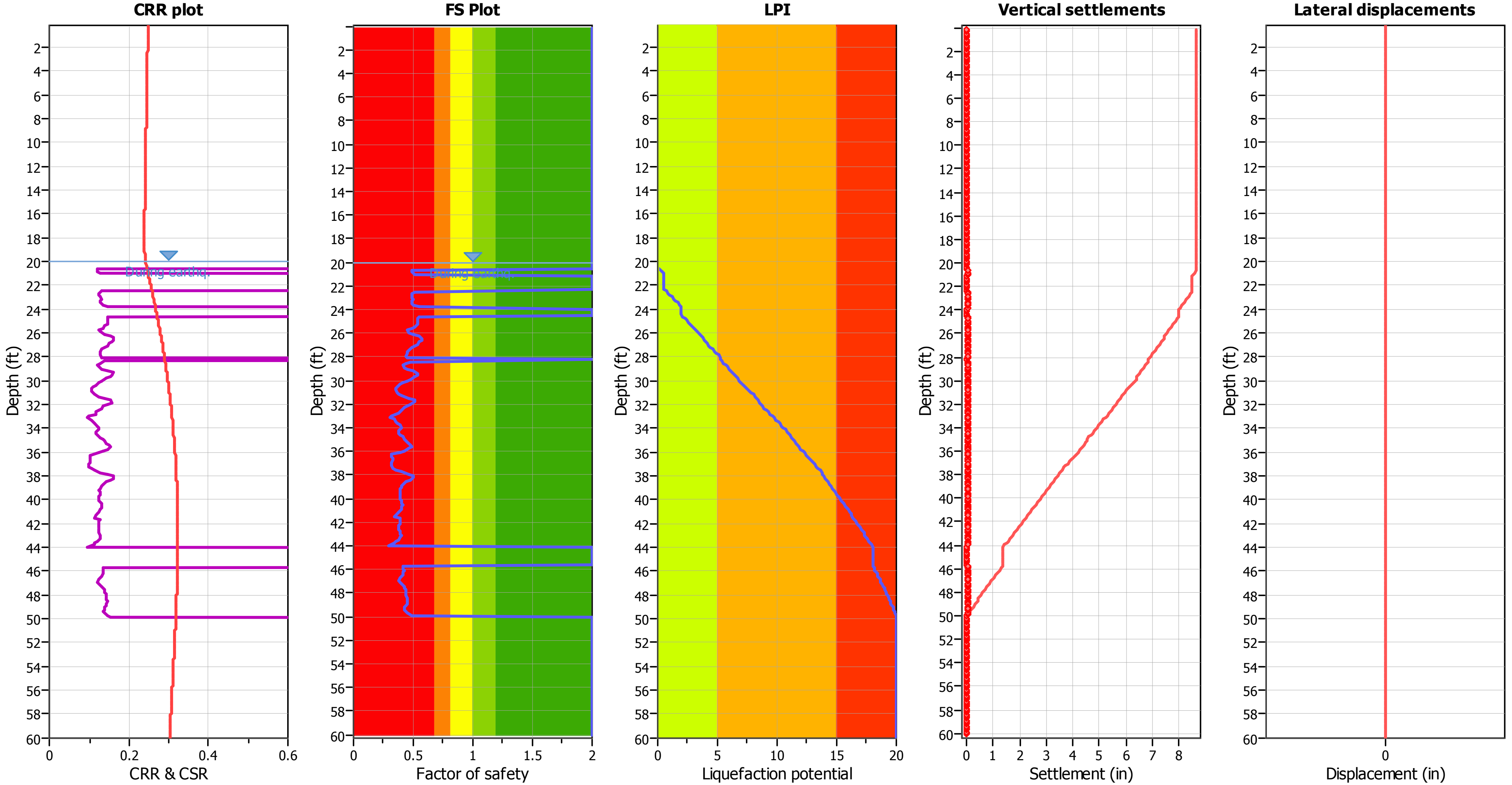
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.44	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Appendix D

References

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Appendix E

Recommended Grading Specifications – General Provisions

RECOMMENDED GRADING SPECIFICATIONS - GENERAL PROVISIONS

NAGATA PROPERTY
4617 NORTH RIVER ROAD
OCEANSIDE, CALIFORNIA

GENERAL INTENT

The intent of these specifications is to establish procedures for clearing, compacting natural ground, preparing areas to be filled, and placing and compacting fill soils to the lines and grades shown on the accepted plans. The recommendations contained in the preliminary geotechnical investigation report and/or the attached Special Provisions are a part of the Recommended Grading Specifications and shall supersede the provisions contained hereinafter in the case of conflict. These specifications shall only be used in conjunction with the geotechnical report for which they are a part. No deviation from these specifications will be allowed, except where specified in the geotechnical report or in other written communication signed by the Geotechnical Engineer.

OBSERVATION AND TESTING

Christian Wheeler Engineering shall be retained as the Geotechnical Engineer to observe and test the earthwork in accordance with these specifications. It will be necessary that the Geotechnical Engineer or his representative provide adequate observation so that he may provide his opinion as to whether or not the work was accomplished as specified. It shall be the responsibility of the contractor to assist the Geotechnical Engineer and to keep him appraised of work schedules, changes and new information and data so that he may provide these opinions. In the event that any unusual conditions not covered by the special provisions or preliminary geotechnical report are encountered during the grading operations, the Geotechnical Engineer shall be contacted for further recommendations.

If, in the opinion of the Geotechnical Engineer, substandard conditions are encountered, such as questionable or unsuitable soil, unacceptable moisture content, inadequate compaction, adverse weather, etc., construction should be stopped until the conditions are remedied or corrected or he shall recommend rejection of this work.

Tests used to determine the degree of compaction should be performed in accordance with the following American Society for Testing and Materials test methods:

Maximum Density & Optimum Moisture Content - ASTM D-1557-91
Density of Soil In-Place - ASTM D-1556-90 or ASTM D-2922

All densities shall be expressed in terms of Relative Compaction as determined by the foregoing ASTM testing procedures.

PREPARATION OF AREAS TO RECEIVE FILL

All vegetation, brush and debris derived from clearing operations shall be removed, and legally disposed of. All areas disturbed by site grading should be left in a neat and finished appearance, free from unsightly debris.

After clearing or benching the natural ground, the areas to be filled shall be scarified to a depth of 6 inches, brought to the proper moisture content, compacted and tested for the specified minimum degree of compaction. All loose soils in excess of 6 inches thick should be removed to firm natural ground which is defined as natural soil which possesses an in-situ density of at least 90 percent of its maximum dry density.

When the slope of the natural ground receiving fill exceeds 20 percent (5 horizontal units to 1 vertical unit), the original ground shall be stepped or benched. Benches shall be cut to a firm competent formational soil. The lower bench shall be at least 10 feet wide or 1-1/2 times the equipment width, whichever is greater, and shall be sloped back into the hillside at a gradient of not less than two (2) percent. All other benches should be at least 6 feet wide. The horizontal portion of each bench shall be compacted prior to receiving fill as specified herein for compacted natural ground. Ground slopes flatter than 20 percent shall be benched when considered necessary by the Geotechnical Engineer.

Any abandoned buried structures encountered during grading operations must be totally removed. All underground utilities to be abandoned beneath any proposed structure should be removed from within 10 feet of the structure and properly capped off. The resulting depressions from the above described procedure should be backfilled with acceptable soil that is compacted to the requirements of the Geotechnical Engineer. This includes, but is not limited to, septic tanks, fuel tanks, sewer lines or leach lines, storm drains and water lines. Any buried structures or utilities not to be abandoned should be brought to the attention of the Geotechnical Engineer so that he may determine if any special recommendation will be necessary.

All water wells which will be abandoned should be backfilled and capped in accordance to the requirements set forth by the Geotechnical Engineer. The top of the cap should be at least 4 feet below finish grade or 3 feet below the bottom of footing whichever is greater. The type of cap will depend on the diameter of the well and should be determined by the Geotechnical Engineer and/or a qualified Structural Engineer.

FILL MATERIAL

Materials to be placed in the fill shall be approved by the Geotechnical Engineer and shall be free of vegetable matter and other deleterious substances. Granular soil shall contain sufficient fine material to fill the voids. The definition and disposition of oversized rocks and expansive or detrimental soils are covered in the geotechnical report or Special Provisions. Expansive soils, soils of poor gradation, or soils with low strength characteristics may be thoroughly mixed with other soils to provide satisfactory fill material, but only with the explicit consent of the Geotechnical Engineer. Any import material shall be approved by the Geotechnical Engineer before being brought to the site.

PLACING AND COMPACTION OF FILL

Approved fill material shall be placed in areas prepared to receive fill in layers not to exceed 6 inches in compacted thickness. Each layer shall have a uniform moisture content in the range that will allow the compaction effort to be efficiently applied to achieve the specified degree of compaction. Each layer shall be uniformly compacted to the specified minimum degree of compaction with equipment of adequate size to economically compact the layer. Compaction equipment should either be specifically designed for soil compaction or of proven reliability. The minimum degree of compaction to be achieved is specified in either the Special Provisions or the recommendations contained in the preliminary geotechnical investigation report.

When the structural fill material includes rocks, no rocks will be allowed to nest and all voids must be carefully filled with soil such that the minimum degree of compaction recommended in the Special Provisions is achieved. The maximum size and spacing of rock permitted in structural fills and in non-structural fills is discussed in the geotechnical report, when applicable.

Field observation and compaction tests to estimate the degree of compaction of the fill will be taken by the Geotechnical Engineer or his representative. The location and frequency of the tests shall be at the Geotechnical Engineer's discretion. When the compaction test indicates that a particular layer is at less than the required degree of compaction, the layer shall be reworked to the satisfaction of the Geotechnical Engineer and until the desired relative compaction has been obtained.

Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction by sheepsfoot roller shall be at vertical intervals of not greater than four feet. In addition, fill slopes at a ratio of two horizontal to one vertical or flatter, should be trackrolled. Steeper fill slopes shall be over-built and cut-back to finish contours after the slope has been constructed. Slope compaction operations shall result in all fill material six or more inches inward from the finished face of the slope having a relative compaction of at least 90 percent of maximum dry density or the degree of compaction specified in the Special Provisions section of this specification. The compaction operation on the slopes shall be continued until the Geotechnical Engineer is of the opinion that the slopes will be surficially stable.

Density tests in the slopes will be made by the Geotechnical Engineer during construction of the slopes to determine if the required compaction is being achieved. Where failing tests occur or other field problems arise, the Contractor will be notified that day of such conditions by written communication from the Geotechnical Engineer or his representative in the form of a daily field report.

If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor shall rework or rebuild such slopes until the required degree of compaction is obtained, at no cost to the Owner or Geotechnical Engineer.

CUT SLOPES

The Engineering Geologist shall inspect cut slopes excavated in rock or lithified formational material during the grading operations at intervals determined at his discretion. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer to determine if mitigating measures are necessary.

Unless otherwise specified in the geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of the controlling governmental agency.

ENGINEERING OBSERVATION

Field observation by the Geotechnical Engineer or his representative shall be made during the filling and compaction operations so that he can express his opinion regarding the conformance of the grading with acceptable standards of practice. Neither the presence of the Geotechnical Engineer or his representative or the observation and testing shall release the Grading Contractor from his duty to compact all fill material to the specified degree of compaction.

SEASON LIMITS

Fill shall not be placed during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations shall not be resumed until the proper moisture content and density of the fill materials can be achieved. Damaged site conditions resulting from weather or acts of God shall be repaired before acceptance of work.

RECOMMENDED GRADING SPECIFICATIONS - SPECIAL PROVISIONS

RELATIVE COMPACTION: The minimum degree of compaction to be obtained in compacted natural ground, compacted fill, and compacted backfill shall be at least 90 percent. For street and parking lot subgrade, the upper twelve inches should be compacted to at least 95 percent relative compaction.

EXPANSIVE SOILS: Detrimentally expansive soil is defined as clayey soil which has an expansion index of 50 or greater when tested in accordance with the American Society of Testing Materials (ASTM) Laboratory Test D4829-95.

OVERSIZED MATERIAL: Oversized fill material is generally defined herein as rocks or lumps of soil over six inches in diameter. Oversized materials should not be placed in fill unless recommendations of placement of such material is provided by the Geotechnical Engineer. At least 40 percent of the fill soils shall pass through a No. 4 U.S. Standard Sieve.

TRANSITION LOTS: Where transitions between cut and fill occur within the proposed building pad, the cut portion should be undercut a minimum of one foot below the base of the proposed footings and recompacted as structural backfill. In certain cases that would be addressed in the geotechnical report, special footing reinforcement or a combination of special footing reinforcement and undercutting may be required.

APPENDIX L
GREENHOUSE GAS ASSESSMENT

GREENHOUSE GAS ASSESSMENT

Tierra Norte
Planned Block Development – Overlay District
City of Oceanside, CA

Prepared for:

REC Consultants
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EXECUTIVE SUMMARY

This greenhouse gas assessment was prepared according to guidelines established within the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32), Senate Bill 97 (SB97), California Environmental Quality Act (CEQA) and SB32. Greenhouse Gases (GHGs) analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify GHG calculations, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as carbon dioxide equivalent (CO_2e).

The Project site consists of two separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40) located along the south side of North River Road, 0.5 miles east of Douglas Drive in the North Valley Neighborhood in the City of Oceanside. The project is proposing a Planned Block Development (PBD) Overlay District consisting of a medium density residential in-fill development with a dwelling unit 'cap' with a maximum allowance of 400 dwelling units for the entire district overlay. A range of housing types can be provided as part of appropriately scaled medium density developments and may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes, and garden apartments.

Project design features (PDFs) have been included in this Project. The applicant has agreed to implement all PDFs, which will be included in the Project's Conditions of Approval and are shown in Section 1.4 of this report.

During construction of the Project, it is expected that approximately 1,414.35 Metric Tons (MT) of CO_2e will be generated. Given this, the Project would generate 47.15 MT CO_2e per year over the amortized 30-year minimum life of the Project. After Construction and during operations of the Project, a combined GHG emissions of 3,172.26 MT CO_2e is expected. The Project is consistent with the City's General Plan (Housing Element), and the Project is also consistent with the City's Climate Action Plan (CAP) measures to reduce GHG emissions.

Based on this CAP, the Project would be required to generate fewer service population emission than 3.5 MT CO_2e in 2025. The Project was found to generate 3,172.26 MT CO_2e with both annualized construction and annual operation GHG emissions averaged over a Project population of 1,168 persons. Given this, the Project would have a projected GHG emission rate of 2.72 MT CO_2e per SP or (3,172.26 MT CO_2e/1,168 persons). Based on this, the proposed Project would generate fewer emissions than a city-specific localized efficiency metric of 3.5 MT CO_2e per SP. Given this, the Project would be found to generate a less than significant impact.

An alternative analysis has also been prepared for the project using a General Plan (GP) land use comparison. The proposed PBDP Property is currently designated as Limited Industrial (LI) by the City of Oceanside General Plan and allows a Floor Area Ratio (FAR) of 1.0 and a Max Lot Coverage of 75%. The site is 25.6 acres, but 1.8 acres are part of dedicated rights-of-way which are not included in density or site intensity calculations. Given this, the technical gross site area is only 23.8 acres and could accommodate a facility consisting of up to 1,000,000 SF.

The GP Buildout Scenario was found to generate as much as 6,851.42 MT CO_2e. Based on this, the proposed PBD Overlay District to allow for 400 residential uses (which would generate 3,172.26 MT CO_2e) would be a less intense land use with respect to GHG emissions generation. Given this, the proposed project would not conflict with the General Plan and would generate less than significant GHG impacts within the City of Oceanside.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this GHG assessment is to provide documentation in support of the City's CEQA compliance requirement. The proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines which are (14 CCR 15000 et seq.):

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

1.2 Project Location

The proposed Tierra Norte Planned Block Development Overlay District includes two (2) separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of Oceanside.

Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property. A general Project vicinity map is shown in Figure 1-A.

Figure 1-A: Project Vicinity Map

Source: (Google, 2020)

1.3 Project Description

This proposed Project seeks a Planned Block Development Plan (PBDP) for the Overlay District. The intended purpose of the PBD Planned Block Development Overlay District (PBD Overlay District) is to permit flexibility in land-use regulation and site development standards under control of the Planning Commission and City Council where flexibility or coordinated planning for a large site or a site under multiple ownership will enhance the potential for superior urban design.

The PBDP establishes the land use and development standards that will regulate future residential development proposals for the property. The PBDP also presents site planning and architectural design criteria intended to promote development of a well thought-out, highly livable residential community which is compatible with the surrounding neighborhood. Detailed site layouts and residential building designs will ultimately be identified as part of future development plans specifically proposed for the property. While a comprehensive Project may be proposed for the entire Overlay Area, it is recognized that each parcel exists under separate ownership and that multiple development plans may also be considered.

The PBDP Property is currently designated as Limited Industrial (LI) by the City of Oceanside General Plan and allows a Floor Area Ratio (FAR) of 1.0 and a Max Lot Coverage of 75%. The site is 25.6 acres, but 1.8 acres are part of dedicated rights-of-way which are not included in density or site intensity calculations. So, the technical gross site area is only 23.8 acres and could accommodate a facility consisting of roughly 1,000,000 SF. The Project proposes to establish the PBD Overlay District on this property, amend its land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

A medium-density residential use on this property would complement the existing residential uses located to the north and west while providing a transition from light industrial uses located to the east. Infill residential development represents an opportunity to repurpose this underutilized site by providing future housing opportunities for the Oceanside community.

A range of housing types can be provided as part of appropriately scaled medium density developments. These residential building types may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes and garden apartments, along with various other product configurations. The MDC-R designation establishes a density range of 15.1 – 20.9 dwelling units per acre with a potential overall development range of between 359 and 497 dwelling units. However, this PBDP institutes a dwelling unit ‘cap’ with a maximum allowance of only 400 dwelling units for the entire overlay district. The proposed PBDP area is shown on Figure 1-B.

Figure 1-B: Proposed PBD Overlay District

Source: (Google Earth, 2020)

1.4 Project Design Features

Project design features (PDFs) have been incorporated into the Project to reduce emissions associated with operations of this Project. This report will define specifically which design features were included within the GHG estimation software and it should be expected that whenever a design feature is included within greenhouse gas modeling that those particular design features would be required for the Project to implement such that the City of Oceanside can recommend approval. If mitigation measures are required for compliance, they will be identified later in this analysis. A list of the Projects PDFs are provided below.

1. The Project would install Low Flow water fixtures in all the units.
2. All lights within the facility will be designed use LED technology and would be for both indoor and outdoor areas.
3. The Project would provide separate waste containers to allow for simpler material separations or the Project would pay for a waste collection service that recycles the materials in accordance with AB 341 to achieve a 75% waste diversion. All green waste will be diverted from landfills and recycled as mulch.
4. The Project would only install natural gas hearth units where applicable. No wood burning hearths onsite.
5. The Project would utilize Tier 4 construction Equipment or equivalent.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Greenhouse Gasses

GHGs such as water vapor and carbon dioxide are abundant in the earth's atmosphere. These gases are called "Greenhouse Gases" because they absorb and emit thermal infrared radiation which acts like an insulator to the planet. Without these gases, the earth's ambient temperature would either be extremely hot during the day or blistering cold at night. However, because these gases can both absorb and emit heat, the earth's temperature does not sway too far in either direction.

Over the years as human activities require the use of burning fossil fuels stored carbon is released into the air in the form of CO_2 and to a much lesser extent Carbon Monoxide (CO). Additionally, over the years scientist have measured this rise in Carbon Dioxide and the general consensus is that human activities contribute to the heating of the planet. Additionally, other GHGs such as Methane and Nitrous Oxide would contribute to global warming.

GHGs of concern as analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify GHG calculations, both CH_4 and N_2O can be converted to an equivalent amount of CO_2 or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The latest California Emissions Estimator Model (CalEEMod 2016.3.2) developed by Breeze Software uses the Intergovernmental Panel on Climate Change (IPCC) 2007 report as source data for GWP factors for both CH_4 and N_2O (CAPCOA, September 2016), using the 100-year period of 25 and 298, respectively (IPCC, 2007). Furthermore, it should be noted that biogenic GHGs from the degradation of organic materials produced by human activities such as solid waste breakdown and wastewater breakdown which are also calculated within CalEEMod and presented in this report.

2.2 Existing Setting

Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property. The surrounding North Valley Neighborhood presents a diversity of land uses situated between Camp Pendleton on the north and the San Luis Rey River on the south. The neighborhood area is home to a number of multi-family developments and single-family subdivisions ranging from just a few years to nearly 50 years old.

Neighborhood serving commercial uses are located nearby along the North River Road corridor at intersections with Douglas Drive, College Boulevard, and Vandegrift Boulevard. The North River Village mixed-use development and San Luis Rey Bus Transit Center (SLRBTC) are also located approximately within one (1) mile of the Overlay Area at the southeast corner of the North River Road and Vandegrift Boulevard intersection.

2.3 Climate (Oceanside)

Climate within the San Diego Air Basin (SDAB) area varies dramatically over short geographical distances due to size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps the high desert mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. Prevailing winds are generally westerly flowing towards the east for most of the year; however, during the autumn and winter, it is common for strong warm dry winds originating in the desert having a more easterly flow characteristic.

Meteorological trends within the City of Oceanside are typically cooler given the close vicinity to the ocean. Median temperatures range from approximately 55ºF in the winter to approximately 72ºF in the summer (City-Data, 2020)

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Federal

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs— Carbon Dioxide CO_2, CH_4, N_2O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF_6)— in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the California Air Resources Board (CARB) is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team[1] early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33 percent
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions
4. Establishing targets for transportation related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard

[1] The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update*). The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The *First Update* identified key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan* (*Second Update*) for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030,[2] inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health. When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every project … and the inability of a project to mitigate its GHG emissions to net zero does not imply the Project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." CARB's Governing Board adopted the *Second Update* in December 2017.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG

2 In July 2017, AB 398 was enacted into law, thereby extending the legislatively-authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2013 Title 24 standards went into effect on July 1, 2014 and were estimated to reduce energy uses between 3.8% to 36.4%, depending on the energy source and land (Architectural Energy Corporation (AEC), 2013).

The 2016 Title 24 standards, which went into effect on January 1, 2017, are the currently applicable standards. When comparing the 2013 and 2016 standards for electrical consumption, it is expected that low-rise, single-family detached homes and multi-family homes would use 12% and 15% less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21% in single-family homes and 31% in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5% reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015). The current version of CalEEMod used in this analysis employs, as a default parameter, the 2016 Title 24 standards to estimate GHG emissions.

The Project would be required, at a minimum, to comply with the latest version of Title 24 standards at the time the Project seeks building permits. This will likely be the 2019 standards, as those standards will go into effect on January 1, 2020. The 2019 standards continue to improve upon the 2016 standards for residential and nonresidential buildings. One of the most notable changes in the 2019 standards is the requirement for the installation of rooftop solar on residential buildings (California Energy Commission, 2017). It should be noted that the State updates these regulations every three years. Thus, throughout Project construction, buildings will need comply with the most recently adopted standards.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen

2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

The newest CALGreen Standards were updated in 2019 and will become effective on January 1, 2020. The updated Code includes modifications to current codes under Division 5.1 (Planning and Design), Division 5.3 (Water Efficiency and Conservation), Division 5.4 and 5.5 (Material Conservation and Resource Efficiency) and (Environmental Quality). (California Title 24, Part 11, 2019). Should building permits be required after January 2020, CALGreen standards would be applicable.

Zero Net Energy Design Goals

As recognized in the *First Update* to the *Scoping Plan*, the California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. As background, the California Public Utilities Commission first set forth its zero net energy goals in the 2008 Energy Efficiency Strategic Plan and the 2011 Big Bold Energy Efficiency Strategies. The key policy timelines include: (1)

all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030. As most recently defined by the CEC in its 2015 *Integrated Energy Policy Report*, a zero net energy code building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building using the CEC's Time Dependent Valuation metric. It should be noted that Title 24 (2019) which will be effective in 2020 requires rooftop solar for all new residential units.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent (CARB, Clean Car Standards - Pavley, Assembly Bill 1493, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

In 2018, CARB extended and expanded the Low Carbon Fuel Standard regulations to include a 20 percent target for reduction in carbon intensity by 2030.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), a SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG adopted in 2010 are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035. SANDAG is in the process of preparing its next SCS, which will consider whether and how the region could attain these reduction targets.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 (CARB, 2012).

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

SB 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

<u>Renewable Energy Procurement</u>

SB 1078

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle, 2018). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

3.3 Project Specific Guidelines

Appendix G of the CEQA Guidelines

Amendments to Appendix G of the CEQA Guidelines were finalized in December 2018. According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact related to GHGs if it would:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*
2. *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

For purposes of this analysis, the two Appendix G checklist questions set forth above are utilized as the thresholds of significance when evaluating the environmental effects of the Project's GHG emissions. In applying these thresholds, reference is made to CEQA Guidelines Section 15064.4(b)(1)-(3).

City of Oceanside Climate Action Plan

The City of Oceanside's Climate Action Plan (CAP) seeks to align with state efforts to reduce greenhouse gas (GHG) emissions while balancing a variety of community interests: e.g., quality of life, economic development, and social equity. The CAP outlines several measures the Oceanside community will take to make progress towards meeting the State of California's 2050 GHG reduction goal. The CAP has been prepared as part of the City's General Plan and utilizes land use assumptions to estimate GHG inventories presented in the CAP. Therefore, a project would be required to conform to all General Plan policies.

California State laws governing GHG emissions within the state are generally written to conform to both the Global Warming Solutions Act of 2006 (AB 32) and Senate Bill 32 (SB 32). These laws were written to reduce GHG emissions within the state to meet goals set forth within the laws therein. The current goal for the State is to reduce GHG emissions by 40 percent below 1990 levels by 2030. To meet the requirements of the State's laws, the City of Oceanside has adopted a screening threshold of 900 metric tons of GHG's per year.

Projects exceeding the 900 MT GHG screening threshold would be required to demonstrate that GHG emissions do not exceed efficiency/service population thresholds (City of Oceanside, 2019) which are identified below:

- Projects that will be implemented prior to 2020 must show that GHG emissions related to both construction and operation will not exceed 4.0 MT CO_2e/service population per year.
- Projects that will not be implemented prior to 2020 must show that GHG emissions related to both construction and operations will not exceed 3.5 MT CO_2e/service population per year.

Additionally, it should be noted that the San Diego Association of Governments (SANDAG) has indicated that in the City of Oceanside, the average occupancy per home is 2.92 persons/unit (SANDAG, 2013).

<u>City of Oceanside Climate Action Plan</u>

A project's adherence to the City's General Plan can be determined through demonstrating consistency with General Plan land use assumption and policies. If a project would generate fewer GHG emissions than the maximum allowable buildout of the site under the General Plan land use designations, the project would have a less than significant GHG impact.

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

Project construction dates were estimated based on a construction start date in 2022 with construction ending in 2024. CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 VOC paint standards and to include Tier 4 construction equipment. The Project applicant has indicated that onsite facilities which will be demolished as part of this project have a cumulative size of roughly 60,000 SF.

Table 4.1 shows the expected timeframes for the construction of all Project infrastructure, facilities, and improvements, as well as the expected number of pieces of equipment. Also, it should be noted that the below would be conservative in the event construction began/ended at a later date as annual code updates and fleet improvements typically have the effect of restricting and limiting emissions on construction equipment over time.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Demolition	1/1/2024	2/9/2024	
Concrete/Industrial Saws			1
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			2
Site Preparation	2/10/2024	3/8/2024	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	3/9/2024	5/10/2024	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Paving	5/11/2024	6/28/2024	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	7/1/2024	3/6/2026	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	11/28/2025	3/6/2026	
Air Compressors			1
This equipment list is based upon equipment inventory within CalEEMod. The quantity and types are based upon assumptions provided by the Project applicant.			

GHG impacts related to construction will be calculated using the latest CalEEMod 2016.3.2 model which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD). CalEEMod incorporates emission factors from the EMFAC2014 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions and are shown in ***Attachment A*** to this report. Additionally, it should be noted that default vehicle miles traveled (VMT) were updated to reflect EMFACs average miles driven per trip within the County for 2026 is shown in ***Attachment B*** to this report.

Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively minimal portion of the overall lifetime project GHG emissions. To adequately include GHG emission from construction in the lifetime/operational GHG estimates, construction emissions are amortized over a 30-year project lifetime (SCAQMD, 2008).

4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed Project would generate air pollutants and GHG emissions from daily operations which would include sources such as area, energy, mobile, solid waste and water uses, which are calculated within CalEEMod. Area Sources include landscaping, consumer products, and architectural coatings as part of regular maintenance. Energy sources would be from uses such as electricity and natural gas consumption. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs. Water and wastewater emissions from the Project generate emissions from offsite water conveyance and wastewater treatment facilities. Finally, the Project would also generate GHG through the use of carbon fuel burning vehicles for transportation. The Project specific traffic study estimated that 400 unit residential development would generate 3,200 average daily trips (LOS Engineering, Inc., 2021).

Electrical energy-intensity factors were updated within CalEEMod to reflect San Diego Gas and Electric's (SDG&E) emissions rate variations from 2009 which is the default rate data used by CalEEMod. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016) and in 2026 will have up to 49.2 % in place. For purposes of analysis however the State's 33% requirement was assumed. After 2020, in 2030, an additional 27% reduction would be required or 2.7% per year. Given this, SDG&E energy-intensity factors for 2026 were calculated and were modeled as such within CalEEMod as shown in Table 4.3.

Table 4.3: SDG&E Energy Intensity Factors

GHG	2009 Factors (lbs/MWh) w/10.5% RPS	2026 Factors – 46.5% Renewables (lbs/MWh)
Carbon Dioxide (CO_2)	720.49	408.95
Methane (CH_4)	0.029	0.017
Nitrous Oxide (N_2O)	0.006	0.003

As a PDF, the Project will exclusively utilize high-efficiency indoor and outdoor LED lighting in all buildings. LED indoor lighting is 75-90 percent more efficient than standard lighting. High-efficiency lighting is addressed by both the 2013 Title 24 standards (CEC, 2012) and the 2016 Title 24 standards (CEC, 2015); these standards specifically call out lighting power density requirements for non-residential land uses. However, the lighting power density requirements do not change across the two sets of Title 24 standards. Rather, as illustrated by Table 140.6-B within the 2013 and 2016 Title 24 standards, the applicable requirement is 0.60 watts per ft^2. Of note, the default parameters of the version of CalEEMod used in this analysis (along with its predecessor versions) do not account for high-efficiency lighting technologies or the 2016 Title 24. Since the project will be constructed in 2020, the project would be required to utilize Title 24 2019 lighting standards which have not been included in CalEEMod. Given this, the estimated GHG emissions from the project are conservative.

Default parameters of CalEEMod 2016.3.2 (along with its predecessor models) do not account for high-efficiency lighting technologies. For purposes of this analysis, the design feature to utilize 100 percent high-efficiency lighting would reduce energy usage from combined indoor and outdoor lighting by at least 75 percent from that estimated within CalEEMod as is discussed in the paragraph above. For purposes of this analysis only a 65 percent reduction is utilized.

Under AB 341, the project would ultimately be required to increase diversion of waste from landfills by 75%. The project would provide separate waste containers to allow for simpler material separations or would direct the project HOA to utilize a pay for a waste collection service that recycles materials offsite. Additionally, the project would provide for green waste collection so that green waste is diverted from landfills and recycled as mulch. For purposes of this analysis, a 25% reduction in solid waste-related GHGs was applied to reflect AB 341's diversion standard.

Finally, the project would not install any wood burning hearths. As a PDF the project would limit residential units to natural gas hearths only in the event that any site development plans call for heath units.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that grading and construction of the Project will produce approximately 1,414.35 MT CO_2e over the construction life of the Project. Based on SQAQMD methodology, it is recommended to average the construction emissions over the Project life which is assumed to be 30 years. Given this, the annual construction emission would be 47.15 MT CO_2e per year. A summary of the construction emissions is shown in Table 5.1 below. The analysis of GHG emissions generated during construction activities includes the application of the design features to include the application of Tier 4 Diesel Equipment.

Table 5.1: Expected Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2024	0.00	601.70	601.70	0.12	0.00	604.73
2025	0.00	674.65	674.65	0.09	0.00	676.81
2026	0.00	132.42	132.42	0.02	0.00	132.81
Total						1,414.35
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						**47.15**
Expected Construction emissions are based upon CalEEMod modeling assumptions listed in Table 4.1 above.						

5.2 Project-Related Operational Emissions

As previously discussed, emissions generated from area, energy, mobile, solid waste and water uses are calculated within CalEEMod. These settings which are automatically populated throughout the model are based on the inputted land use and intensities expected at the Project site. Unless stated within this report, default values generated within CalEEMod were used. The calculated operational emissions for 2026 are identified in Table 5.2.

Based on the CalEEMod analysis, the proposed Project buildout with annualized construction emissions would generate 3,172.26 MT CO_2e annually which is shown in Table 5.2. These emissions include PDFs 1-5 shown in Section 1.4 of this report.

The Project would be consistent with the City's General Plan (Pending approval by the City) and is therefore consistent with the City's CAP assuming CAP measures are implemented on the Project. It should be noted that the design features identified above have been included to address the requirements of the CAP and will be a requirement of this project. Based on this, a less than significant GHG impact is expected.

Table 5.2: Proposed Project Operational GHG emissions (MT/Year)

Source	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e (MT/Yr)
Area	0	319.91	319.91	0.01	0.01	321.9
Electrical Usage	0.00	324.44	324.44	0.01	0.00	325.49
Natural Gas	0	307.01	307.01	0.01	0.01	308.83
Mobile	0.00	1,971.11	1,971.11	0.10	0.00	1,973.69
Waste	28.01	0.00	28.01	1.66	0.00	69.40
Water	8.27	90.04	98.30	0.85	0.02	125.80
Total includes reductions from PDFs 1-5						3,125.11
Amortized Construction Emissions						47.15
Project Total GHG Emissions						**3,172.26**
Residents at 2.92 persons per household * 400 homes						**1,168**
MT/SP						**2.72**
Data is presented in decimal format and may have rounding errors.						

The Project would be required to generate fewer service population emission than 3.5 MT CO_2e in 2025. The Project was found to generate 3,172.26 MT CO_2e with both annualized construction and annual operation GHG emissions averaged over a Project population of 1,168 persons. Given this, the Project would have a projected GHG emission rate of 2.72 MT CO_2e per SP or (3,172.26 MT CO_2e/1,168 persons). Based on this, the proposed Project would generate fewer emissions than a city-specific localized efficiency metric of 3.5 MT CO_2e per SP. Given this, the Project would be found to generate a less than significant impact.

5.3 General Plan Operational Emissions

The PBDP Property is currently designated as LI by the City of Oceanside General Plan and allows a Floor Area Ratio (FAR) of 1.0 and a Max Lot Coverage of 75%. The site is 25.6 acres, but 1.8 acres are part of dedicated rights-of-way which are not included in density or site intensity calculations. Based on a technical gross site area is only 23.8 acres and could accommodate a facility consisting of roughly 1,000,000 SF.

GHG Emissions for the General Plan Buildout Scenario would be from both the combined construction and operational emissions. Construction Emissions would generally be similar to construction emissions generated from the proposed 400-unit residential development though have not been included for the General Plan scenario. Generally, if GHG emissions from the

GP buildout scenario are higher than the proposed project action, the proposed project action and assuming the project action adheres to the City's General Plan and CAP, the project would generate less than significant GHG impacts.

Using a similar methodology with the same CalEEMod software, the 1,000,000 SF light industrial facility was modeled. Where applicable, the same design features were included. Also, the project design assumptions with respect to VMT per trip were utilized. The CalEEMod files are provided as ***Attachment C***.

The GP Buildout Scenario would generate as much as 6,851.42 MT CO_2e as can be seen in Table 5.3. The proposed project seeks to establish a PBD Overlay District and amend its land use designation to MDC-R and rezone the property to RM-C to allow for up to 400 residential units onsite. The operational and construction emissions from the proposed development is expected to generate as much as 3,172.26 MT CO_2e as identified in Table 5.2 above. Based on this, the proposed PBD Overlay District to allow for 400 residential uses would be a less intense land use with respect to GHG emissions generation. Given this, the proposed project would not conflict with the General Plan and would generate less than significant GHG impacts within the City of Oceanside.

Table 5.3: Proposed General Plan Operational GHG emissions (MT/Year)

Source	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e (MT/Yr)
Area	0.00	0.02	0.02	0.00	0.00	0.02
Electrical Usage	0	1,200.26	1,200.26	0.0499	8.80E-03	1,204.13
Natural Gas	0.00	616.89	616.89	0.01	0.01	620.55
Mobile	0.00	3,390.78	3,390.78	0.18	0.00	3,395.19
Waste	188.78	0.00	188.78	11.16	0.00	467.70
Water	700.1	700.1	700.1	700.1	700.1	700.1
(Includes Applicable PDFs Emission Reductions)						6,387.69
General Plan Amortized Construction Emissions						0
General Plan Buildout Scenario Total GHG Emissions (Significance Threshold)						**6,851.42**
Proposed Project Action (From Table 5.2)						**3,172.26**
Significant?						**NO**
Data is presented in decimal format and may have rounding errors.						

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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the projected CO_2e emissions from the Project development based upon the best available information at the time of preparation.

DRAFT

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Jeremy Louden, Principal — Date November 15, 2021

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ATTACHMENT A

CalEEMod 2016.3.2 (400 Residential Units)

Tierra Norte PBD Overlay District

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	400.00	Dwelling Unit	25.60	400,000.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2026
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	408.95	**CH4 Intensity (lb/MWhr)**	0.017	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2026

Land Use - Site Acreage

Construction Phase - CS

Demolition -

Architectural Coating - Rule 67 Paint

Vehicle Trips - ADT per Traffic Study...Trip Length per EMFAC 2014 model run for the County of San Diego for 2026

Woodstoves - Natural Gas Fireplace for 400 units

Area Coating - Rule 67 Psint

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	71.00
tblFireplaces	NumberGas	220.00	400.00
tblFireplaces	NumberNoFireplace	40.00	0.00

tblFireplaces	NumberWood	140.00	0.00
tblLandUse	LotAcreage	25.00	25.60
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.017
tblProjectCharacteristics	CO2IntensityFactor	720.49	408.95
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	HO_TL	7.50	5.33
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TL	7.30	5.33
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.33
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	5.67	8.00
tblVehicleTrips	SU_TR	4.84	8.00
tblVehicleTrips	WD_TR	5.81	8.00
tblWoodstoves	NumberCatalytic	20.00	0.00
tblWoodstoves	NumberNoncatalytic	20.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.3135	2.6406	2.9032	6.7500e-003	0.5883	0.1068	0.6951	0.2337	0.0992	0.3330	0.0000	601.7035	601.7035	0.1211	0.0000	604.7308
2025	1.1466	2.1235	2.9643	7.5100e-003	0.3442	0.0720	0.4162	0.0923	0.0677	0.1600	0.0000	674.6533	674.6533	0.0862	0.0000	676.8079
2026	1.7171	0.4069	0.5861	1.4800e-003	0.0719	0.0141	0.0860	0.0193	0.0133	0.0326	0.0000	132.4169	132.4169	0.0159	0.0000	132.8143
Maximum	**1.7171**	**2.6406**	**2.9643**	**7.5100e-003**	**0.5883**	**0.1068**	**0.6951**	**0.2337**	**0.0992**	**0.3330**	**0.0000**	**674.6533**	**674.6533**	**0.1211**	**0.0000**	**676.8079**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1217	0.5665	3.2329	6.7500e-003	0.5883	8.5400e-003	0.5968	0.2337	8.4500e-003	0.2422	0.0000	601.7030	601.7030	0.1211	0.0000	604.7303
2025	1.0092	0.7757	3.1441	7.5100e-003	0.3442	7.8700e-003	0.3521	0.0923	7.6900e-003	0.1000	0.0000	674.6530	674.6530	0.0862	0.0000	676.8075
2026	1.6894	0.1425	0.6190	1.4800e-003	0.0719	1.5500e-003	0.0735	0.0193	1.5100e-003	0.0208	0.0000	132.4168	132.4168	0.0159	0.0000	132.8142
Maximum	**1.6894**	**0.7757**	**3.2329**	**7.5100e-003**	**0.5883**	**8.5400e-003**	**0.5968**	**0.2337**	**8.4500e-003**	**0.2422**	**0.0000**	**674.6530**	**674.6530**	**0.1211**	**0.0000**	**676.8075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**11.23**	**71.29**	**-8.40**	**0.00**	**0.00**	**90.69**	**14.61**	**0.00**	**90.21**	**30.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	**1-1-2024**	**3-31-2024**	0.9452	0.1176
10	**4-1-2024**	**6-30-2024**	0.6950	0.0868
11	**7-1-2024**	**9-30-2024**	0.6426	0.2368
12	**10-1-2024**	**12-31-2024**	0.6483	0.2424
13	**1-1-2025**	**3-31-2025**	0.5952	0.2328
14	**4-1-2025**	**6-30-2025**	0.5965	0.2301
15	**7-1-2025**	**9-30-2025**	0.6031	0.2326
16	**10-1-2025**	**12-31-2025**	1.4841	1.0996
17	**1-1-2026**	**3-31-2026**	2.1008	1.8122
		Highest	2.1008	1.8122

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Energy	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	679.7337	679.7337	0.0214	8.3600e-003	682.7603
Mobile	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Waste						0.0000	0.0000		0.0000	0.0000	37.3503	0.0000	37.3503	2.2073	0.0000	92.5339
Water						0.0000	0.0000		0.0000	0.0000	8.2682	96.8083	105.0764	0.8532	0.0208	132.5946
Total	**2.5644**	**2.9791**	**9.2288**	**0.0248**	**2.0771**	**0.0770**	**2.1540**	**0.5561**	**0.0758**	**0.6318**	**45.6185**	**3,067.5643**	**3,113.1827**	**3.1958**	**0.0349**	**3,203.4793**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Energy	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	631.4516	631.4516	0.0194	8.0100e-003	634.3224
Mobile	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Waste						0.0000	0.0000		0.0000	0.0000	28.0128	0.0000	28.0128	1.6555	0.0000	69.4004
Water						0.0000	0.0000		0.0000	0.0000	8.2682	90.0362	98.3044	0.8530	0.0207	125.8007
Total	**2.5644**	**2.9791**	**9.2288**	**0.0248**	**2.0771**	**0.0770**	**2.1540**	**0.5561**	**0.0758**	**0.6318**	**36.2809**	**3,012.5100**	**3,048.7909**	**2.6417**	**0.0345**	**3,125.1140**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.47**	**1.79**	**2.07**	**17.34**	**1.15**	**2.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	2/9/2024	5	30	
2	Site Preparation	Site Preparation	2/10/2024	3/8/2024	5	20	
3	Grading	Grading	3/9/2024	5/10/2024	5	45	
4	Paving	Paving	5/11/2024	6/28/2024	5	35	
5	Building Construction	Building Construction	7/1/2024	3/6/2026	5	440	
6	Architectural Coating	Architectural Coating	11/28/2025	3/6/2026	5	71	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 810,000; Residential Outdoor: 270,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	288.00	43.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0299	0.0000	0.0299	4.5300e-003	0.0000	4.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0337	0.3132	0.2956	5.8000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	50.9941	50.9941	0.0143	0.0000	51.3508
Total	**0.0337**	**0.3132**	**0.2956**	**5.8000e-004**	**0.0299**	**0.0144**	**0.0443**	**4.5300e-003**	**0.0134**	**0.0179**	**0.0000**	**50.9941**	**50.9941**	**0.0143**	**0.0000**	**51.3508**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.8000e-004	0.0218	8.2500e-003	1.0000e-004	2.3400e-003	4.0000e-005	2.3800e-003	6.4000e-004	4.0000e-005	6.8000e-004	0.0000	9.8430	9.8430	8.9000e-004	0.0000	9.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.3000e-004	4.5200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4029	1.4029	3.0000e-005	0.0000	1.4038
Total	**1.3500e-003**	**0.0223**	**0.0128**	**1.2000e-004**	**4.1400e-003**	**5.0000e-005**	**4.2000e-003**	**1.1200e-003**	**5.0000e-005**	**1.1700e-003**	**0.0000**	**11.2459**	**11.2459**	**9.2000e-004**	**0.0000**	**11.2690**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0299	0.0000	0.0299	4.5300e-003	0.0000	4.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9300e-003	0.0301	0.3492	5.8000e-004		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	50.9940	50.9940	0.0143	0.0000	51.3507
Total	**6.9300e-003**	**0.0301**	**0.3492**	**5.8000e-004**	**0.0299**	**9.2000e-004**	**0.0308**	**4.5300e-003**	**9.2000e-004**	**5.4500e-003**	**0.0000**	**50.9940**	**50.9940**	**0.0143**	**0.0000**	**51.3507**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.8000e-004	0.0218	8.2500e-003	1.0000e-004	2.3400e-003	4.0000e-005	2.3800e-003	6.4000e-004	4.0000e-005	6.8000e-004	0.0000	9.8430	9.8430	8.9000e-004	0.0000	9.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.3000e-004	4.5200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4029	1.4029	3.0000e-005	0.0000	1.4038
Total	**1.3500e-003**	**0.0223**	**0.0128**	**1.2000e-004**	**4.1400e-003**	**5.0000e-005**	**4.2000e-003**	**1.1200e-003**	**5.0000e-005**	**1.1700e-003**	**0.0000**	**11.2459**	**11.2459**	**9.2000e-004**	**0.0000**	**11.2690**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.2718	0.1834	3.8000e-004		0.0123	0.0123		0.0113	0.0113	0.0000	33.4571	33.4571	0.0108	0.0000	33.7276
Total	**0.0266**	**0.2718**	**0.1834**	**3.8000e-004**	**0.1807**	**0.0123**	**0.1930**	**0.0993**	**0.0113**	**0.1106**	**0.0000**	**33.4571**	**33.4571**	**0.0108**	**0.0000**	**33.7276**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1223	1.1223	3.0000e-005	0.0000	1.1230
Total	**5.3000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1223**	**1.1223**	**3.0000e-005**	**0.0000**	**1.1230**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0202	0.2087	3.8000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.4570	33.4570	0.0108	0.0000	33.7275
Total	**4.6600e-003**	**0.0202**	**0.2087**	**3.8000e-004**	**0.1807**	**6.2000e-004**	**0.1813**	**0.0993**	**6.2000e-004**	**0.0999**	**0.0000**	**33.4570**	**33.4570**	**0.0108**	**0.0000**	**33.7275**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1223	1.1223	3.0000e-005	0.0000	1.1230
Total	**5.3000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1223**	**1.1223**	**3.0000e-005**	**0.0000**	**1.1230**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0724	0.7285	0.6238	1.4000e-003		0.0301	0.0301		0.0276	0.0276	0.0000	122.6689	122.6689	0.0397	0.0000	123.6608
Total	**0.0724**	**0.7285**	**0.6238**	**1.4000e-003**	**0.1952**	**0.0301**	**0.2252**	**0.0809**	**0.0276**	**0.1086**	**0.0000**	**122.6689**	**122.6689**	**0.0397**	**0.0000**	**123.6608**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	8.5000e-004	9.0400e-003	3.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.8058	2.8058	7.0000e-005	0.0000	2.8075
Total	**1.3300e-003**	**8.5000e-004**	**9.0400e-003**	**3.0000e-005**	**3.6100e-003**	**2.0000e-005**	**3.6300e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**2.8058**	**2.8058**	**7.0000e-005**	**0.0000**	**2.8075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.0743	0.7425	1.4000e-003		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	122.6688	122.6688	0.0397	0.0000	123.6606
Total	**0.0171**	**0.0743**	**0.7425**	**1.4000e-003**	**0.1952**	**2.2800e-003**	**0.1974**	**0.0809**	**2.2800e-003**	**0.0832**	**0.0000**	**122.6688**	**122.6688**	**0.0397**	**0.0000**	**123.6606**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	8.5000e-004	9.0400e-003	3.0000e-005	3.6100e-003	2.0000e-005	3.6300e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.8058	2.8058	7.0000e-005	0.0000	2.8075
Total	**1.3300e-003**	**8.5000e-004**	**9.0400e-003**	**3.0000e-005**	**3.6100e-003**	**2.0000e-005**	**3.6300e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**2.8058**	**2.8058**	**7.0000e-005**	**0.0000**	**2.8075**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0173	0.1667	0.2560	4.0000e-004		8.2000e-003	8.2000e-003		7.5400e-003	7.5400e-003	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0173**	**0.1667**	**0.2560**	**4.0000e-004**		**8.2000e-003**	**8.2000e-003**		**7.5400e-003**	**7.5400e-003**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.0000e-004	5.2700e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6367	1.6367	4.0000e-005	0.0000	1.6377
Total	**7.8000e-004**	**5.0000e-004**	**5.2700e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1200e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.6367**	**1.6367**	**4.0000e-005**	**0.0000**	**1.6377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0213	0.3027	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9100e-003**	**0.0213**	**0.3027**	**4.0000e-004**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.0000e-004	5.2700e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6367	1.6367	4.0000e-005	0.0000	1.6377
Total	**7.8000e-004**	**5.0000e-004**	**5.2700e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1200e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.6367**	**1.6367**	**4.0000e-005**	**0.0000**	**1.6377**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0971	0.8873	1.0670	1.7800e-003		0.0405	0.0405		0.0381	0.0381	0.0000	153.0204	153.0204	0.0362	0.0000	153.9250
Total	**0.0971**	**0.8873**	**1.0670**	**1.7800e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**153.0204**	**153.0204**	**0.0362**	**0.0000**	**153.9250**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0700e-003	0.2133	0.0649	7.3000e-004	0.0188	2.5000e-004	0.0191	5.4400e-003	2.4000e-004	5.6800e-003	0.0000	71.1886	71.1886	4.8100e-003	0.0000	71.3088
Worker	0.0564	0.0360	0.3818	1.3100e-003	0.1524	1.0200e-003	0.1534	0.0405	9.3000e-004	0.0414	0.0000	118.5173	118.5173	2.9400e-003	0.0000	118.5907
Total	**0.0624**	**0.2493**	**0.4468**	**2.0400e-003**	**0.1713**	**1.2700e-003**	**0.1725**	**0.0459**	**1.1700e-003**	**0.0471**	**0.0000**	**189.7058**	**189.7058**	**7.7500e-003**	**0.0000**	**189.8995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0216	0.1475	1.1524	1.7800e-003		2.6900e-003	2.6900e-003		2.6900e-003	2.6900e-003	0.0000	153.0202	153.0202	0.0362	0.0000	153.9249
Total	**0.0216**	**0.1475**	**1.1524**	**1.7800e-003**		**2.6900e-003**	**2.6900e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**153.0202**	**153.0202**	**0.0362**	**0.0000**	**153.9249**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0700e-003	0.2133	0.0649	7.3000e-004	0.0188	2.5000e-004	0.0191	5.4400e-003	2.4000e-004	5.6800e-003	0.0000	71.1886	71.1886	4.8100e-003	0.0000	71.3088
Worker	0.0564	0.0360	0.3818	1.3100e-003	0.1524	1.0200e-003	0.1534	0.0405	9.3000e-004	0.0414	0.0000	118.5173	118.5173	2.9400e-003	0.0000	118.5907
Total	**0.0624**	**0.2493**	**0.4468**	**2.0400e-003**	**0.1713**	**1.2700e-003**	**0.1725**	**0.0459**	**1.1700e-003**	**0.0471**	**0.0000**	**189.7058**	**189.7058**	**7.7500e-003**	**0.0000**	**189.8995**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.4157	0.1258	1.4200e-003	0.0373	4.8000e-004	0.0377	0.0108	4.6000e-004	0.0112	0.0000	139.9029	139.9029	9.4100e-003	0.0000	140.1382
Worker	0.1064	0.0656	0.7047	2.4900e-003	0.3014	1.9800e-003	0.3034	0.0801	1.8200e-003	0.0819	0.0000	224.8674	224.8674	5.3600e-003	0.0000	225.0014
Total	**0.1181**	**0.4813**	**0.8305**	**3.9100e-003**	**0.3386**	**2.4600e-003**	**0.3411**	**0.0908**	**2.2800e-003**	**0.0931**	**0.0000**	**364.7703**	**364.7703**	**0.0148**	**0.0000**	**365.1396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0428	0.2916	2.2786	3.5200e-003		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.0428**	**0.2916**	**2.2786**	**3.5200e-003**		**5.3200e-003**	**5.3200e-003**		**5.3200e-003**	**5.3200e-003**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.4157	0.1258	1.4200e-003	0.0373	4.8000e-004	0.0377	0.0108	4.6000e-004	0.0112	0.0000	139.9029	139.9029	9.4100e-003	0.0000	140.1382
Worker	0.1064	0.0656	0.7047	2.4900e-003	0.3014	1.9800e-003	0.3034	0.0801	1.8200e-003	0.0819	0.0000	224.8674	224.8674	5.3600e-003	0.0000	225.0014
Total	**0.1181**	**0.4813**	**0.8305**	**3.9100e-003**	**0.3386**	**2.4600e-003**	**0.3411**	**0.0908**	**2.2800e-003**	**0.0931**	**0.0000**	**364.7703**	**364.7703**	**0.0148**	**0.0000**	**365.1396**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2930	0.3780	6.3000e-004		0.0124	0.0124		0.0117	0.0117	0.0000	54.5011	54.5011	0.0128	0.0000	54.8214
Total	**0.0321**	**0.2930**	**0.3780**	**6.3000e-004**		**0.0124**	**0.0124**		**0.0117**	**0.0117**	**0.0000**	**54.5011**	**54.5011**	**0.0128**	**0.0000**	**54.8214**

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0738	0.0223	2.5000e-004	6.7100e-003	8.0000e-005	6.7900e-003	1.9400e-003	8.0000e-005	2.0200e-003	0.0000	25.0490	25.0490	1.6800e-003	0.0000	25.0910
Worker	0.0184	0.0110	0.1193	4.3000e-004	0.0543	3.4000e-004	0.0546	0.0144	3.2000e-004	0.0147	0.0000	39.0104	39.0104	9.0000e-004	0.0000	39.0329
Total	**0.0204**	**0.0848**	**0.1416**	**6.8000e-004**	**0.0610**	**4.2000e-004**	**0.0614**	**0.0164**	**4.0000e-004**	**0.0168**	**0.0000**	**64.0594**	**64.0594**	**2.5800e-003**	**0.0000**	**64.1238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-003	0.0525	0.4103	6.3000e-004		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	54.5010	54.5010	0.0128	0.0000	54.8213
Total	**7.7000e-003**	**0.0525**	**0.4103**	**6.3000e-004**		**9.6000e-004**	**9.6000e-004**		**9.6000e-004**	**9.6000e-004**	**0.0000**	**54.5010**	**54.5010**	**0.0128**	**0.0000**	**54.8213**

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0738	0.0223	2.5000e-004	6.7100e-003	8.0000e-005	6.7900e-003	1.9400e-003	8.0000e-005	2.0200e-003	0.0000	25.0490	25.0490	1.6800e-003	0.0000	25.0910
Worker	0.0184	0.0110	0.1193	4.3000e-004	0.0543	3.4000e-004	0.0546	0.0144	3.2000e-004	0.0147	0.0000	39.0104	39.0104	9.0000e-004	0.0000	39.0329
Total	**0.0204**	**0.0848**	**0.1416**	**6.8000e-004**	**0.0610**	**4.2000e-004**	**0.0614**	**0.0164**	**4.0000e-004**	**0.0168**	**0.0000**	**64.0594**	**64.0594**	**2.5800e-003**	**0.0000**	**64.1238**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0138	0.0217	4.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0681
Total	**0.8481**	**0.0138**	**0.0217**	**4.0000e-005**		**6.2000e-004**	**6.2000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0681**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.2200e-003	0.0131	5.0000e-005	5.5800e-003	4.0000e-005	5.6200e-003	1.4800e-003	3.0000e-005	1.5200e-003	0.0000	4.1642	4.1642	1.0000e-004	0.0000	4.1667
Total	**1.9700e-003**	**1.2200e-003**	**0.0131**	**5.0000e-005**	**5.5800e-003**	**4.0000e-005**	**5.6200e-003**	**1.4800e-003**	**3.0000e-005**	**1.5200e-003**	**0.0000**	**4.1642**	**4.1642**	**1.0000e-004**	**0.0000**	**4.1667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	1.5500e-003	0.0220	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0681
Total	**0.8464**	**1.5500e-003**	**0.0220**	**4.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0681**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.2200e-003	0.0131	5.0000e-005	5.5800e-003	4.0000e-005	5.6200e-003	1.4800e-003	3.0000e-005	1.5200e-003	0.0000	4.1642	4.1642	1.0000e-004	0.0000	4.1667
Total	**1.9700e-003**	**1.2200e-003**	**0.0131**	**5.0000e-005**	**5.5800e-003**	**4.0000e-005**	**5.6200e-003**	**1.4800e-003**	**3.0000e-005**	**1.5200e-003**	**0.0000**	**4.1642**	**4.1642**	**1.0000e-004**	**0.0000**	**4.1667**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0200e-003	0.0269	0.0425	7.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	6.0002	6.0002	3.3000e-004	0.0000	6.0083
Total	**1.6609**	**0.0269**	**0.0425**	**7.0000e-005**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**6.0002**	**6.0002**	**3.3000e-004**	**0.0000**	**6.0083**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2100e-003	0.0240	9.0000e-005	0.0109	7.0000e-005	0.0110	2.9000e-003	6.0000e-005	2.9700e-003	0.0000	7.8563	7.8563	1.8000e-004	0.0000	7.8608
Total	**3.7000e-003**	**2.2100e-003**	**0.0240**	**9.0000e-005**	**0.0109**	**7.0000e-005**	**0.0110**	**2.9000e-003**	**6.0000e-005**	**2.9700e-003**	**0.0000**	**7.8563**	**7.8563**	**1.8000e-004**	**0.0000**	**7.8608**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-004	3.0300e-003	0.0431	7.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	6.0001	6.0001	3.3000e-004	0.0000	6.0083
Total	**1.6576**	**3.0300e-003**	**0.0431**	**7.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**6.0001**	**6.0001**	**3.3000e-004**	**0.0000**	**6.0083**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2100e-003	0.0240	9.0000e-005	0.0109	7.0000e-005	0.0110	2.9000e-003	6.0000e-005	2.9700e-003	0.0000	7.8563	7.8563	1.8000e-004	0.0000	7.8608
Total	**3.7000e-003**	**2.2100e-003**	**0.0240**	**9.0000e-005**	**0.0109**	**7.0000e-005**	**0.0110**	**2.9000e-003**	**6.0000e-005**	**2.9700e-003**	**0.0000**	**7.8563**	**7.8563**	**1.8000e-004**	**0.0000**	**7.8608**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907
Unmitigated	0.6000	2.4077	6.0330	0.0213	2.0771	0.0171	2.0941	0.5561	0.0159	0.5719	0.0000	1,971.1108	1,971.1108	0.1032	0.0000	1,973.6907

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	3,200.00	3,200.00	3200.00	5,513,435	5,513,435
Total	3,200.00	3,200.00	3,200.00	5,513,435	5,513,435

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	5.33	5.33	5.33	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.611343	0.038414	0.178161	0.100214	0.013382	0.005338	0.017151	0.024839	0.001931	0.001783	0.005765	0.000770	0.000908

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.4421	324.4421	0.0135	2.3800e-003	325.4885
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	372.7243	372.7243	0.0155	2.7300e-003	373.9264
NaturalGas Mitigated	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
NaturalGas Unmitigated	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.75314e+006	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
Total		**0.0310**	**0.2651**	**0.1128**	**1.6900e-003**		**0.0214**	**0.0214**		**0.0214**	**0.0214**	**0.0000**	**307.0095**	**307.0095**	**5.8800e-003**	**5.6300e-003**	**308.8339**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.75314e+006	0.0310	0.2651	0.1128	1.6900e-003		0.0214	0.0214		0.0214	0.0214	0.0000	307.0095	307.0095	5.8800e-003	5.6300e-003	308.8339
Total		**0.0310**	**0.2651**	**0.1128**	**1.6900e-003**		**0.0214**	**0.0214**		**0.0214**	**0.0214**	**0.0000**	**307.0095**	**307.0095**	**5.8800e-003**	**5.6300e-003**	**308.8339**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	2.00933e+006	372.7243	0.0155	2.7300e-003	373.9264
Total		**372.7243**	**0.0155**	**2.7300e-003**	**373.9264**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	1.74905e+006	324.4421	0.0135	2.3800e-003	325.4885
Total		**324.4421**	**0.0135**	**2.3800e-003**	**325.4885**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998
Unmitigated	1.9334	0.3062	3.0830	1.8900e-003		0.0385	0.0385		0.0385	0.0385	0.0000	319.9114	319.9114	0.0107	5.7800e-003	321.8998

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5622					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0318	0.2721	0.1158	1.7400e-003		0.0220	0.0220		0.0220	0.0220	0.0000	315.0599	315.0599	6.0400e-003	5.7800e-003	316.9322
Landscaping	0.0891	0.0342	2.9672	1.6000e-004		0.0165	0.0165		0.0165	0.0165	0.0000	4.8515	4.8515	4.6500e-003	0.0000	4.9677
Total	**1.9334**	**0.3062**	**3.0830**	**1.9000e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**	**0.0000**	**319.9114**	**319.9114**	**0.0107**	**5.7800e-003**	**321.8998**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5622					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0318	0.2721	0.1158	1.7400e-003		0.0220	0.0220		0.0220	0.0220	0.0000	315.0599	315.0599	6.0400e-003	5.7800e-003	316.9322
Landscaping	0.0891	0.0342	2.9672	1.6000e-004		0.0165	0.0165		0.0165	0.0165	0.0000	4.8515	4.8515	4.6500e-003	0.0000	4.9677
Total	**1.9334**	**0.3062**	**3.0830**	**1.9000e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**	**0.0000**	**319.9114**	**319.9114**	**0.0107**	**5.7800e-003**	**321.8998**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	98.3044	0.8530	0.0207	125.8007
Unmitigated	105.0764	0.8532	0.0208	132.5946

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	26.0616 / 16.4301	105.0764	0.8532	0.0208	132.5946
Total		**105.0764**	**0.8532**	**0.0208**	**132.5946**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	26.0616 / 13.1441	98.3044	0.8530	0.0207	125.8007
Total		**98.3044**	**0.8530**	**0.0207**	**125.8007**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.0128	1.6555	0.0000	69.4004
Unmitigated	37.3503	2.2073	0.0000	92.5339

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	184	37.3503	2.2073	0.0000	92.5339
Total		**37.3503**	**2.2073**	**0.0000**	**92.5339**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	138	28.0128	1.6555	0.0000	69.4004
Total		**28.0128**	**1.6555**	**0.0000**	**69.4004**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

EMFAC 2014 (2026 - VMT per Trip Calculations)

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: San Diego
Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips
San Diego	2026	HHDT	Aggregatec	Aggregatec	GAS	167.5957326	21749.52304	3353.255417
San Diego	2026	HHDT	Aggregatec	Aggregatec	DSL	15645.91165	2135078.651	0
San Diego	2026	LDA	Aggregatec	Aggregatec	GAS	1451654.062	47518288.54	9191060.676
San Diego	2026	LDA	Aggregatec	Aggregatec	DSL	18622.51166	616981.99	117205.7083
San Diego	2026	LDA	Aggregatec	Aggregatec	ELEC	121062.083	4949434.022	785628.5789
San Diego	2026	LDT1	Aggregatec	Aggregatec	GAS	110115.5939	3331644.121	666437.355
San Diego	2026	LDT1	Aggregatec	Aggregatec	DSL	124.8114255	2633.841787	613.970893
San Diego	2026	LDT1	Aggregatec	Aggregatec	ELEC	42.69926559	1352.096485	259.1206316
San Diego	2026	LDT2	Aggregatec	Aggregatec	GAS	452771.2683	15436548.86	2865498.527
San Diego	2026	LDT2	Aggregatec	Aggregatec	DSL	970.5635469	33713.91312	6177.316206
San Diego	2026	LHDT1	Aggregatec	Aggregatec	GAS	16314.81646	444554.2917	243066.4562
San Diego	2026	LHDT1	Aggregatec	Aggregatec	DSL	23051.92533	717478.8991	289964.2213
San Diego	2026	LHDT2	Aggregatec	Aggregatec	GAS	4046.175021	138815.0608	60281.97901
San Diego	2026	LHDT2	Aggregatec	Aggregatec	DSL	9116.703082	324679.087	114676.656
San Diego	2026	MCY	Aggregatec	Aggregatec	GAS	71325.57419	500602.409	142636.8833
San Diego	2026	MDV	Aggregatec	Aggregatec	GAS	268481.0435	8489901.386	1669638.038
San Diego	2026	MDV	Aggregatec	Aggregatec	DSL	6019.410703	211944.3776	38351.37966
San Diego	2026	MH	Aggregatec	Aggregatec	GAS	8321.649313	61737.13592	832.4977973
San Diego	2026	MH	Aggregatec	Aggregatec	DSL	2245.347186	17146.85063	224.5347186
San Diego	2026	MHDT	Aggregatec	Aggregatec	GAS	3171.174025	164145.6455	63448.8499
San Diego	2026	MHDT	Aggregatec	Aggregatec	DSL	26576.49204	1325120.363	0
San Diego	2026	OBUS	Aggregatec	Aggregatec	GAS	1755.939329	93481.56971	35132.8341
San Diego	2026	OBUS	Aggregatec	Aggregatec	DSL	980.0428572	74167.93587	0
San Diego	2026	SBUS	Aggregatec	Aggregatec	GAS	460.1745622	20767.56101	1840.698249
San Diego	2026	SBUS	Aggregatec	Aggregatec	DSL	1216.407802	46089.03739	0
San Diego	2026	UBUS	Aggregatec	Aggregatec	GAS	483.1218265	64703.68329	1932.487306
San Diego	2026	UBUS	Aggregatec	Aggregatec	DSL	673.1632845	90155.61205	2692.653138
							Total VMT	Total Trips
						Total	86832916.46	16300954.68

VMT/Trip	5.326860799

ATTACHMENT C

CalEEMod 2016.3.2 (General Plan Buildout Scenario)

Tierra Norte GP 1000000 sf light industrial

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1,000.00	1000sqft	25.60	1,000,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2026
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	408.95	**CH4 Intensity (lb/MWhr)**	0.017	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - rps

Land Use - Site is 25.6 acres

Construction Phase - no construction assumed

Off-road Equipment - equipment not used

Trips and VMT - No transportation for construction assumed

Demolition -

Area Coating - rule 67 paint

Energy Use -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Vehicle Trips - Per EMFAC

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblConstructionPhase	NumDays	30.00	2.00
tblLandUse	LotAcreage	22.96	25.60
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.017
tblProjectCharacteristics	CO2IntensityFactor	720.49	408.95
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblVehicleTrips	CC_TL	7.30	5.33
tblVehicleTrips	CNW_TL	7.30	5.33
tblVehicleTrips	CW_TL	9.50	5.33

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.3698	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190
Energy	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	2,158.3624	2,158.3624	0.0759	0.0226	2,167.0000
Mobile	1.0030	4.0383	10.2698	0.0366	3.5901	0.0293	3.6193	0.9611	0.0272	0.9883	0.0000	3,390.7827	3,390.7827	0.1761	0.0000	3,395.1858
Waste						0.0000	0.0000		0.0000	0.0000	251.7088	0.0000	251.7088	14.8756	0.0000	623.5979
Water						0.0000	0.0000		0.0000	0.0000	73.3650	558.5500	631.9149	7.5585	0.1820	875.1200
Total	**5.4352**	**4.6051**	**10.7550**	**0.0400**	**3.5901**	**0.0724**	**3.6624**	**0.9611**	**0.0703**	**1.0314**	**325.0738**	**6,107.7129**	**6,432.7867**	**22.6861**	**0.2046**	**7,060.9227**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.3698	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190
Energy	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	1,817.1414	1,817.1414	0.0617	0.0201	1,824.6784
Mobile	1.0030	4.0383	10.2698	0.0366	3.5901	0.0293	3.6193	0.9611	0.0272	0.9883	0.0000	3,390.7827	3,390.7827	0.1761	0.0000	3,395.1858
Waste						0.0000	0.0000		0.0000	0.0000	188.7816	0.0000	188.7816	11.1567	0.0000	467.6984
Water						0.0000	0.0000		0.0000	0.0000	58.6920	446.8400	505.5319	6.0468	0.1456	700.0960
Total	**5.4352**	**4.6051**	**10.7550**	**0.0400**	**3.5901**	**0.0724**	**3.6624**	**0.9611**	**0.0703**	**1.0314**	**247.4736**	**5,654.7819**	**5,902.2555**	**17.4414**	**0.1657**	**6,387.6777**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**23.87**	**7.42**	**8.25**	**23.12**	**19.01**	**9.53**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	no construction assumed	Demolition	8/5/2020	8/6/2020	5	2	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
no construction assumed	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
no construction assumed	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 no construction assumed - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 no construction assumed - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0030	4.0383	10.2698	0.0366	3.5901	0.0293	3.6193	0.9611	0.0272	0.9883	0.0000	3,390.7827	3,390.7827	0.1761	0.0000	3,395.1858
Unmitigated	1.0030	4.0383	10.2698	0.0366	3.5901	0.0293	3.6193	0.9611	0.0272	0.9883	0.0000	3,390.7827	3,390.7827	0.1761	0.0000	3,395.1858

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6,970.00	1,320.00	680.00	9,529,694	9,529,694
Total	6,970.00	1,320.00	680.00	9,529,694	9,529,694

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	5.33	5.33	5.33	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.611343	0.038414	0.178161	0.100214	0.013382	0.005338	0.017151	0.024839	0.001931	0.001783	0.005765	0.000770	0.000908

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,200.255 8	1,200.255 8	0.0499	8.8000e-003	1,204.127 0
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,541.476 7	1,541.476 7	0.0641	0.0113	1,546.448 5
NaturalGas Mitigated	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	616.8856	616.8856	0.0118	0.0113	620.5515
NaturalGas Unmitigated	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	616.8856	616.8856	0.0118	0.0113	620.5515

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.156e +007	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	616.8856	616.8856	0.0118	0.0113	620.5515
Total		**0.0623**	**0.5667**	**0.4760**	**3.4000e-003**		**0.0431**	**0.0431**		**0.0431**	**0.0431**	**0.0000**	**616.8856**	**616.8856**	**0.0118**	**0.0113**	**620.5515**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.156e +007	0.0623	0.5667	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	616.8856	616.8856	0.0118	0.0113	620.5515
Total		**0.0623**	**0.5667**	**0.4760**	**3.4000e-003**		**0.0431**	**0.0431**		**0.0431**	**0.0431**	**0.0000**	**616.8856**	**616.8856**	**0.0118**	**0.0113**	**620.5515**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	8.31e +006	1,541.476 7	0.0641	0.0113	1,546.448 5
Total		**1,541.476 7**	**0.0641**	**0.0113**	**1,546.448 5**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	6.4705e +006	1,200.255 8	0.0499	8.8000e-003	1,204.127 0
Total		**1,200.255 8**	**0.0499**	**8.8000e-003**	**1,204.127 0**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.3698	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190
Unmitigated	4.3698	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9055					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.4000e-004	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190
Total	**4.3698**	**8.0000e-005**	**9.1700e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0190**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9055					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.4000e-004	8.0000e-005	9.1700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0190
Total	**4.3698**	**8.0000e-005**	**9.1700e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0190**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	505.5319	6.0468	0.1456	700.0960
Unmitigated	631.9149	7.5585	0.1820	875.1200

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	231.25 / 0	631.9149	7.5585	0.1820	875.1200
Total		**631.9149**	**7.5585**	**0.1820**	**875.1200**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	185 / 0	505.5319	6.0468	0.1456	700.0960
Total		**505.5319**	**6.0468**	**0.1456**	**700.0960**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	188.7816	11.1567	0.0000	467.6984
Unmitigated	251.7088	14.8756	0.0000	623.5979

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1240	251.7088	14.8756	0.0000	623.5979
Total		**251.7088**	**14.8756**	**0.0000**	**623.5979**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	930	188.7816	11.1567	0.0000	467.6984
Total		**188.7816**	**11.1567**	**0.0000**	**467.6984**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX M
CORTESE LIST VERIFICATION

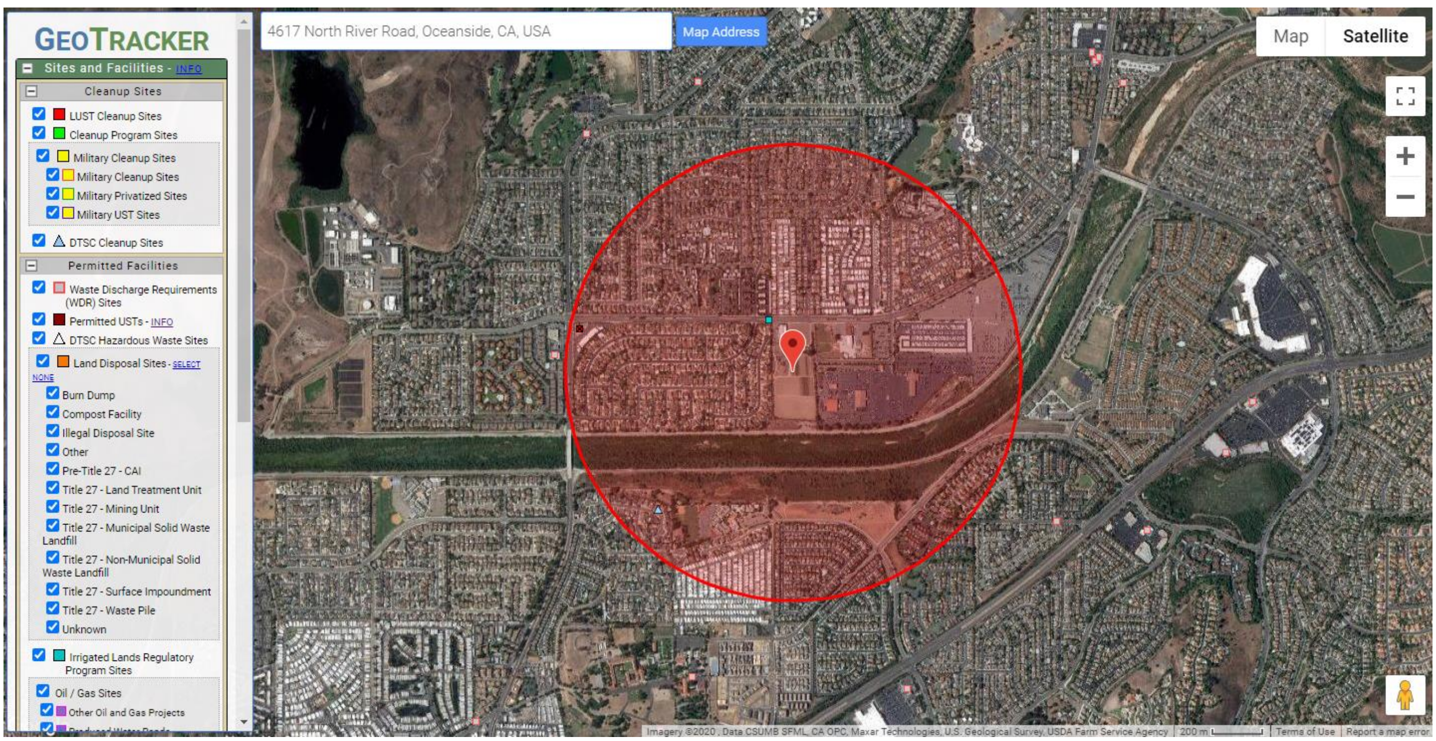
CORTESE LIST VERIFICATION

North River Road Planned Block Development
Location: 4617 and 4665 North River Road, Oceanside, CA
APN: 157-060-40 and 157-050-17

1. After reviewing the California Department of Toxic Substance Control (DTSC) [EnviroStor database], it is concluded that the property of interest is NOT included in the Hazardous Waste and Substances Site List.

[REPORT] [MAP]	OCEANSIDE SITE DISCOVERY	60002805	STATE RESPONSE	ACTIVE	STUDY AREA BOUNDED BY OCEANSIDE BOULEVARD AND S COAST HIGHWAY	OCEANSIDE	92054	66-70%	SAN DIEGO
[REPORT] [MAP]	TRI-CITY PLATING, INCORPORATED	37340034	STATE RESPONSE	ACTIVE	1307 SOUTH COAST HIGHWAY	OCEANSIDE	92054	66-70%	SAN DIEGO

2. After reviewing the List of Leaking Underground Storage Tank Sites by County from the Water Board [GeoTracker database], it is concluded that the property of interest is NOT included in this list.



October 29, 2020

3. After reviewing the list of solid waste disposal sites identified by Water Board with waste constituents above hazardous waste levels outside the waste management unit, it is concluded that the property of interest is NOT included in the list.

SITES IDENTIFIED WITH WASTE CONSTITUENTS ABOVE HAZARDOUS WASTE LEVELS OUTSIDE THE WASTE MANAGEMENT UNIT

COUNTY	CITY	REGION	SWAT I	WASTE DISCHARGER SYSTEM NO.	SOLID WASTE ID NO.	WASTE MANAGEMENT UNIT NAME	FACILITY NAME	AGENCY NAME
DEL NORTE	CRESCENT CITY	1	2	1A880520NSL-01		DEL NORTE COUNTY- PESTICIDE STORAGE	DEL NORTE PESTICIDE STORAGE AR	DEL NORTE, COUNTY OF
CONTRA COSTA	PITTSBURG	2	1	2 071059002-02	07-A1-0001	U.S. STEEL CORP.-PITTSBURG SITE LA	WDR-USS-POSCO	USS-POSCO
SOLANO	VALLEJO	2	1	2 482011003-01	48-AA-0008	US NAVY MARE ISLAND SANITARY LANDFILL	WDR-NAVAL SHIPYARD/CLASS I LAN	MARE ISLAND NAVAL SHIPYARD
CONTRA COSTA	RICHMOND	2	3	2 071007002-01		CHEVRON CHEMICAL COMPANY-OLD SITES	WDR-ORTHO DIV-RICHMOND PLANT	CHEVRON CHEMICAL COMPANY
MONTEREY	FORT ORD (Marina)	3	1	3 270301004-01	27-AA-0015	FORT ORD LANDFILL	SANITARY LANDFILL	U.S. ARMY, FORT ORD
SANTA BARBARA	LOMPOC	3	3	3 420305001-01	42-AA-0017	LOMPOC CITY LANDFILL	SOLID WASTE DISPOSAL SITE	LOMPOC CITY
LOS ANGELES	MONTEREY PARK	4	1	4B190332001-01	19-AM-0001	OPERATING INDUSTRIES LANDFILL	OPERATING INDUSTRIES, INC.	OPERATING INDUSTRIES, INC.
TULARE	WOODLAKE	5F	1	5D540300010-01	54-AA-0007	TULARE COUNTY-WOODLAKE LANDFILL	WOODLAKE SWDS	TULARE, COUNTY OF
FRESNO	FRESNO	5F	2	5D100300001-01		MCKINLEY AVE. YARD	T.H. AGRICULTURE AND NUTRITION	NORTH AMERICAN PHILLIPS
KINGS	CORCORAN	5F	2	5D160302001-01	16-AA-0011	KINGS COUNTY-CORCORAN LANDFILL	CORCORAN SWDS	KINGS COUNTY WASTE MGMT AUTH.
FRESNO	FRESNO	5F	3	5D100319001-01	10-AA-0013	ORANGE AVENUE DISPOSAL COMPANY	ORANGE AVENUE LANDFILL	ORANGE AVENUE DISP CO. INC
TULARE	EXETER	5F	3	5D540300003-01	54-AA-0002	TULARE COUNTY-EXETER DISPOSAL SITE	EXETER SWDS	TULARE, COUNTY OF
MERCED	ATWATER	5F	4	5C240115001-01		ATWATER CITY	BERT CRANE ROAD LANDFILL	ATWATER, CITY OF
FRESNO	FOWLER	5F	5	5D100325N01-01		FOWLER CITY	FOWLER CITY LANDFILL (OLD)	FOWLER, CITY OF
BUTTE	OROVILLE	5R	2	5A042005001-01		KOPPERS COMPANY-OROVILLE SITE	KOPPERS WOOD PRESERVING ISW	KOPPERS INDUSTRIES INC.
BUTTE	CHICO	5R	4	5A040302N01-01		CHICO CITY BURN DUMP	HUMBOLDT ROAD LANDFILL	CHICO, CITY OF
SACRAMENTO	SACRAMENTO	5S	1	5A340700003-01	34-AA-0008	US AIR FORCE-MCCLELLAN AFB LANDFILL	CLASS III SITE 8 (CLOSURE)	US AIR FORCE-MCCLELLAN AFB
SACRAMENTO	MATHER (Rancho Cordova)	5S	2	5A340700001-01		US AIR FORCE-MATHER FIELD LANDFILL	MATHER AFB ENVIRONMENTAL MGMT	US AIR FORCE – MATHER AFB
SACRAMENTO	SACRAMENTO	5S	3	5B342000N01-01		SACRAMENTO ARMY DEPOT	SACRAMENTO ARMY DEPOT	U.S. ARMY
SAN JOAQUIN	STOCKTON	5S	3	5 390002NUR-01	39-AA-0006	US NAVY COMMUNICATIONS LANDFILL	U.S.N. COMMUNICATION STA. LANDF	U.S. NAVY COMMUNICATIONS
SAN JOAQUIN	FRENCH CAMP	5S	3	5 390003NUR-01		US ARMY-SHARPE ARMY DEPOT	US ARMY-SHARPE ARMY DEPOT	US ARMY
SAN JOAQUIN	TRACY	5S	5	5 390006NUR-01		SITE 300 (OTHER 39 WMUS)	LAWRENCE LIVERMORE LAB	LAWRENCE LIVERMORE LABS
INYO	KEELER	6V	1	6B142000041-01	14-AA-0008	US TUNGSTEN OWENS LAKE LANDFILL	OWENS LAKE LANDFILL	UMETCO MINERALS CORPORATION
ORANGE	FULLERTON	8	1	8300002NUR-01		MCCOLL SITE	MCCOLL SLUDGE DISPOSAL SITE	TOXIC SUBSTANCES CONTROL DIVIS
RIVERSIDE	RIVERSIDE	8	1	8 330325001-01		STRINGFELLOW QUARRY ACID PITS	STATE OF CALIFORNIA-STRINGFELLOW	TOXIC PROGRAM MANAGEMENT SECT

4. After reviewing the (MS Excel) list of “active” CDO and CAO from the Water Board, it is concluded that the property of interest is NOT included in this list.

5. After reviewing the list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC, it is concluded that the property of interest is NOT included in the list.

Cortese List: Section 65962.5(a)

Information Required From the Department of Toxic Substances Control (DTSC) Under Government Code Section 65962.5(a)

Section 65962.5(a)(1) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ….(1) [a]ll hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code ("HSC")."

The hazardous waste facilities identified in HSC § 25187.5 are those where DTSC has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment. This is a very small and specific subgroup of facilities and they are not separately posted on the DTSC or CalEPA's website.

The facilities listed below fall under this category:

- AAD Distribution & Dry Cleaning Inc. EPA ID CAD981397417 2306 E. 38th StreetVernon, CA 90058
- The Marquardt Co. CA ID CAD044696102 16555 Saticoy Street Van Nuys, CA 91406

Section 65962.5(a)(2) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: … (2) [a]ll land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code."

No facilities or lands are listed under this provision because DTSC has not designated any hazardous waste property or border zone property pursuant to the cited provisions.

Section 65962.5(a)(3) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ….(3) [a]ll information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.

HSC § 25242(a) requires a city, county, or state agency that owns or leases land to notify DTSC if it "has probable cause to believe that a disposal of hazardous waste, which is not authorized pursuant to this chapter has occurred on, under or into the land which the city, county, or state agency owns or leases…"; DTSC then shall determine if there has been an unauthorized disposal of hazardous waste.

In practice, if a city, county or state agency contacts DTSC to provide such information, they also will have contacted or will be directed to contact DTSC's Emergency Response Duty Officer, who determines whether to authorize DTSC-funding for an emergency action to properly remove and dispose of the hazardous waste.

DTSC's Emergency Response program does not keep separate records of such reports that relate to city, county or state agency property.

In the future, DTSC will track any reports received from cities, counties, or state agencies of hazardous waste disposal on land owned or leased by a city, county or state agency, where hazardous waste was released into the environment, and provide the information to CalEPA for inclusion in this section of the Cortese list.

Section 65962.5(a)(4)requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ….(4) [a]ll sites listed pursuant to Section 25356 of the Health and Safety Code."

HSC § 25356(b)(1) requires "a listing of hazardous substance release sites selected for, and subject to, a response action under this chapter." HSC § 25356(b)(2) requires DTSC to "update the list of sites at least annually to reflect new information regarding previously listed sites or the addition of new sites requiring response action." The implementing regulations provide that sites may be listed pursuant to HSC § 25356 if (a) they are not owned by the Federal Government and (b) a release or threatened release of hazardous substances has been confirmed by on-site sampling. (California Code of Regulations, Title 22, Section 67400.1). DTSC's list of sites that meet those criteria as well as the criteria in HSC § 25356(c), is found in a report in DTSC's "Envirostor" database:

- Hazardous Waste and Substances site "Cortese" list

Sites where response actions have been completed and no operation and maintenance activities are required are not included on the list.

Section 65962.5(a)(5) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ….(5) [a]ll sites included in the Abandoned Site Assessment Program."

DTSC had an abandoned site program in the 1980s. HSC § 25369, which was enacted in 1985, required an abandoned site survey in "rural unsurveyed counties." Sites identified in the abandoned site program were included in the "CalSites" database of known and potential hazardous substance release sites. After further investigation, many sites were removed from the "CalSites" database because there was no evidence that a release of hazardous substances occurred. Some time in the early 1990s, DTSC's activities under HSC § 25369, and the entire Abandoned Site Program, were concluded.

DTSC recently replaced the "CalSites" database with a new database of hazardous substance release sites, known as the "EnviroStor" database. The EnviroStor database does not indicate if a specific site was at one time included in the abandoned site program and does not have a category for sites that are considered abandoned. The CalSites database also did not include this information. Consequently, DTSC does not provide the information to CalEPA originally called for under section 65962.5(a)(5).

Background and History

APPENDIX N
NOISE STUDY

NOISE STUDY

North River Road
Planned Block Development – Overlay District
City of Oceanside, CA

Prepared For:

REC Consultants
2442 Second Avenue
San Diego, CA 92101

Prepared By:

Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562

October 2, 2020

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GLOSSARY OF COMMON TERMS

Sound Pressure Level (SPL): a ratio of one sound pressure to a reference pressure (L_{ref}) of 20 µPa. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by 20 log (L/L_{ref}).

A-weighted Sound Pressure Level (dBA): Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.

Minimum Sound Level (L_{min}): Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.

Maximum Sound Level (L_{max}): Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.

Equivalent sound level (L_{eq}): the true equivalent sound level measured over the run time. Leq is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.

Day Night Sound Level (LDN): Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB "Penalty" for nighttime noise. Typically, LDN's are measured using A weighting.

Community Noise Exposure Level (CNEL): The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.

Octave Band: An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.

Third-Octave Band: A third-octave band is defined as a frequency band whose upper band-edge frequency is 1.26 times the lower band frequency.

Response Time (F,S,I): The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively.

EXECUTIVE SUMMARY

This noise study has been completed to determine the noise impacts to and from the proposed residential development of a 25.6 acre Project site. The Project site consists of two separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40) located along the south side of North River Road, 0.5 miles east of Douglas Drive in the North Valley Neighborhood in the City of Oceanside. The project is proposing a Planned Block Development (PBD) Overlay District consisting of a medium density residential in-fill development with a dwelling unit 'cap' with a maximum allowance of 400 dwelling units for the entire district overlay. A range of housing types can be provided as part of appropriately scaled medium density developments and may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes, and garden apartments.

Transportation Noise Levels – Onsite

Based upon these findings, noise mitigation in the form of 7-foot barriers are necessary at the top of slope along North River Road for the units adjacent to roadway to comply with the City's 65 dBA Noise standards. The barriers must be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials.

The City of Oceanside as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above 60 dBA CNEL in order to ensure a 45 dBA CNEL interior noise level. An interior noise assessment is required for the residential units along the roadways prior to the issuance of the first building permit once the architectural floor plans are available. This final report would identify the interior noise requirements to meet the City's established interior noise limit of 45 dBA CNEL. It should be noted:

Offsite Project Related Transportation Noise Levels

The Project does not create a direct noise increase of more than 3 dBA CNEL on any roadway segment. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses. Therefore, the Project's contributions to off-site roadway noise increase would not be considered cumulatively considerable and would not cause any significant impacts.

Construction Noise Levels

None of the proposed construction equipment will exceed the City of Oceanside 85 dBA standard at 100 feet from the source. The project will meet the City of Oceanside's 85 dBA standard at 100 feet from the source for all proposed equipment and no impacts are anticipated. No impacts will occur and no mitigation measures are required.

Construction Vibration Levels

Given attenuation of vibration velocities with distance, the RMS vibration velocity and peak particle velocity at the nearest existing residence would be about 78 VdB and 0.03 inch per second, respectively. Based on the construction vibration human annoyance criterion of 80 VdB published by the FTA, the vibration levels for the construction activity on nearby residential structures will not be significant.

Operational Project Related Noise Levels

Based upon the operational noise levels none of the proposed noise sources are anticipated to exceed the property line standards at the surround property lines. Therefore, the proposed development related operational noise levels comply with the City's noise standards. No impacts are anticipated and no mitigation is required.

1.0 PROJECT INTRODUCTION

1.1 Purpose of this Study

The purpose of this Noise study is to determine noise impacts, if any, to the Project from off-site sources (i.e. vehicular traffic along adjacent roadways) and impacts from the Project operations (i.e. traffic generated from Project). Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to reduce impacts to below a level of significance.

1.2 Project Location

The proposed North River Road Planned Block Development Overlay District includes two (2) separate parcels located at 4617 and 4665 North River Road (APNs 157-060-17 & 157-060-40). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of Oceanside.

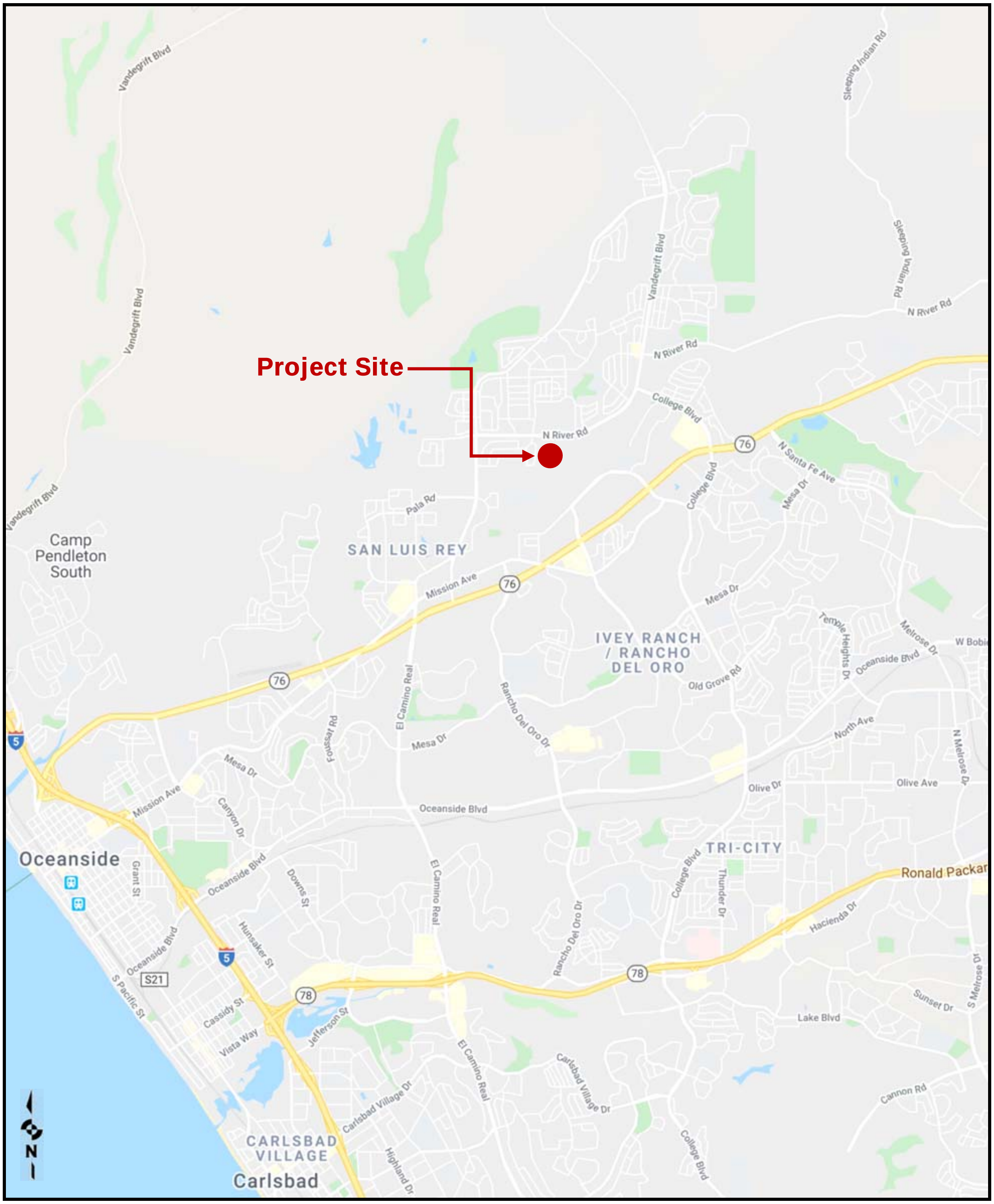
Parcel A, the eastern parcel, is approximately 9.7 total acres in size and currently developed with a small office/warehouse facility. The facility on site has historically (dating to the 1960's) served as a packing warehouse utilized for produce shipping and storage operations. The offices were added at a later date to support administrative functions. The property remains today as a remnant agricultural support use with a small office and very limited shipping/warehousing operations.

Parcel B, the western parcel, comprises approximately 15.9 total acres with roughly 75% of the land area in agricultural cultivation. Several small warehouse buildings used primarily for agricultural storage and a single-family dwelling occupy remaining portions of the property. A general Project vicinity map is shown in Figure 1-A.

1.3 Project Description

This proposed Project seeks a Planned Block Development Plan (PBDP) for the Overlay District. The intended purpose of the PBD Planned Block Development Overlay District (PBD Overlay District) is to permit flexibility in land-use regulation and site development standards under control of the Planning Commission and City Council where flexibility or coordinated planning for a large site or a site under multiple ownership will enhance the potential for superior urban design.

Figure 1-A: Project Vicinity Map



Source: Google Maps, 2020

The PBDP establishes the land use and development standards that will regulate future residential development proposals for the property. The PBDP also presents site planning and architectural design criteria intended to promote development of a well thought-out, highly livable residential community which is compatible with the surrounding neighborhood. Detailed site layouts and residential building designs will ultimately be identified as part of future development plans specifically proposed for the property. While a comprehensive Project may be proposed for the entire Overlay Area, it is recognized that each parcel exists under separate ownership and that multiple development plans may also be considered.

The PBDP Property is currently designated as Limited Industrial (LI) by the City of Oceanside General Plan and allows a Floor Area Ratio (FAR) of 1.0 and a Max Lot Coverage of 75%. The site is 25.6 acres, but 1.8 acres are part of dedicated rights-of-way which are not included in density or site intensity calculations. So, the technical gross site area is only 23.8 acres and could accommodate a facility consisting of roughly 1,000,000 SF.

The Project proposes to establish the PBD Overlay District on this property, amend its land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

A medium-density residential use on this property would complement the existing residential uses located to the north and west while providing a transition from light industrial uses located to the east. Infill residential development represents an opportunity to repurpose this underutilized site by providing future housing opportunities for the Oceanside community.

A range of housing types can be provided as part of appropriately scaled medium density developments. These residential building types may include small lot single-family homes, detached condominiums, townhomes, courtyard clusters, duplex homes and garden apartments, along with various other product configurations.

The MDC-R designation establishes a density range of 15.1 – 20.9 dwelling units per acre with a potential overall development range of between 359 and 497 dwelling units. However, this PBDP institutes a dwelling unit 'cap' with a maximum allowance of only 400 dwelling units for the entire overlay district. The proposed PBDP area is shown on Figure 1-B.

Figure 1-B: Proposed PBD Overlay District

Source: Google Earth, 2020

2.0 ACOUSTICAL FUNDAMENTALS

2.1 Acoustical Fundamentals

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs, and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as Leq represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The Community Noise Equivalent Level (CNEL) is the 24-hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

A vehicles noise level is a combination of the noise produced by a vehicle's engine, exhaust, and tires. The cumulative traffic noise levels along a roadway segment are based on three primary factors: the amount of traffic, the travel speed of the traffic, and the vehicle mix ratio or number of medium and heavy trucks. The intensity of traffic noise is increased by higher traffic volumes, greater speeds, and increased number of trucks.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore, the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiate in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt, and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas, and vegetation. Alternately, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance.

The most effective noise reduction methods consist of controlling the noise at the source and blocking the noise transmission with barriers. Any or all of these methods may be required to reduce noise levels to an acceptable level. To be effective, a noise barrier must have enough mass to prevent significant noise transmission through it and high enough and long enough to shield the receiver from the noise source. A safe minimum surface weight for a noise barrier is 3.5 pounds/square foot (equivalent to 3/4-inch plywood), and the barrier must be carefully constructed so that there are no cracks or openings.

Barriers constructed of wood or as a wooden fence must have minimum design considerations as follows: the boards must be ¾ inch thick and free of any gaps or knot holes. The design must also incorporate either overlapping the boards at least 1 inch or utilizing a tongue-and-grove design for this to be achieved.

2.2 Vibration Fundamentals

Vibration is a trembling or oscillating motion of the ground. Like noise, vibration is transmitted in waves, but in this case through the ground or solid objects. Unlike noise, vibration is typically felt rather than heard. Vibration can be either natural as in the form of earthquakes, volcanic eruptions; or manmade as from explosions, or heavy machinery. Both natural and manmade vibration may be continuous, such as from operating machinery; or infrequent, as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways: displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position and for the purposes of soil displacement is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Particle acceleration is the rate of change in velocity with respect to time and is measured in inches per second or millimeters per second. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Table 2-1 shows the human reaction to various levels of peak particle velocity.

Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occurring around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, it is less common, to measure traffic frequencies above 30 Hz.

Propagation of ground-borne vibrations is complicated and difficult to predict because of the endless variations in the soil through which the waves travel. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by dropping an object into water. P-waves, or compression waves, are waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and special voids. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Table 2-1: Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage
Source: Caltrans, Division of Environmental Analysis, *Transportation Related Earthborne Vibration, Caltrans Experiences*, Technical Advisory, Vibration, TAV-02-01-R9601, 2002.		

3.0 SIGNIFICANCE THRESHOLDS AND STANDARDS

3.1 Transportation Related Noise

The City of Oceanside's Noise Element requires that all exterior sensitive areas shall limit noise exposure. For noise sensitive residential land uses, the City has adopted a policy which has established a "normally acceptable" exterior noise level goal of 65 dBA CNEL for the outdoor areas and an interior noise level of less than 45 dBA CNEL.

Interior noise levels should be mitigated to a maximum of 45 dBA CNEL in all habitual rooms when the exterior of the residence are exposed to levels of 60 dBA CNEL or more. If windows and doors are required to be closed to meet the interior noise standard, then mechanical ventilation shall be provided per City requirements.

3.2 Construction Noise and Vibration

The City of Oceanside Noise Element controls noise levels due to construction operations. It shall be unlawful for any person to operate construction equipment at any construction site, except as outlined in subsections (a) and (b) below:

(a) It shall be unlawful for any person to operate any construction equipment at a level in excess of 85 dBA at 100 feet from the source.

(b) It should be unlawful for any person to engage in construction activities between 6 PM and 7 AM when such activities exceed the ambient noise level by 5 dBA. A special permit may be granted by the Director of Public Works if extenuating circumstances exist.

The City of has not yet adopted vibration criteria. The United States Department of Transportation Federal Transit Administration (FTA) provides criteria for acceptable levels of groundborne vibration for various types of special buildings that are sensitive to vibration. For purposes of identifying potential project-related vibration impacts, the FTA criteria will be used. The human reaction to various levels of vibration is highly subjective. The upper end of the range shown for the threshold of perception, or roughly 65 VdB, may be considered annoying by some people. Vibration below 65 VdB may also cause secondary audible effects, such as a slight rattling of doors, suspended ceilings/fixtures, windows, and dishes, any of which may result in additional annoyance. Table 3-1 shows the FTA groundborne vibration and noise impact criteria for human annoyance.

Table 3-1: Groundborne Vibration and Noise Impact Criteria (Human Annoyance)

	Groundborne Vibration Impact Levels (VdB re 1 microinch/second)			Groundborne Noise Impact Levels (dB re 20 micropascals)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]	N/A[4]	N/A[4]	N/A[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: United States Department of Transportation Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment,* June 2006.

1 "Frequent Events" are defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.

2 "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day. Most commuter truck lines have this many operations.

3 "Infrequent Events" are defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines

4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

5 Vibration-sensitive equipment is not sensitive to groundborne noise.

In addition to the vibration annoyance standards presented above, the FTA also applies the following standards for construction vibration damage. Table 3-2 on the following page, structural damage is possible for typical residential construction when the peak particle velocity (PPV) exceeds 0.2 inch per second (in/sec). This criterion is the threshold at which there is a risk of damage to normal dwellings.

In the context of this analysis, the noise and vibration impacts associated with the construction operations and blasting operations will be conditioned to comply with the thresholds stated above. The potential noise and vibration impacts are analyzed separately below.

Table 3-2: Groundborne Vibration Impact Criteria (Structural Damage)

Building Category	PPV (in/sec)	VdB
I. Reinforced-concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: United States Department of Transportation Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment,* June 2006.

3.3 Operational Noise

Fixed sources and operational noise standards are governed by the City of Oceanside Noise Ordinance Section 38.12. Except for exempted activities and sounds as provided in this chapter or exempted properties as referenced in Section 38.15, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property in the applicable base district zone on which the sound is produced exceeds the applicable limits set forth below in Table 3-3.

Table 3-3: Operational Noise Level Limits

Base District Zone	7:00 a.m. to 9:59 p.m.	10:00 p.m. to 6:59 a.m.
(1) Residential Districts:		
RE (Residential Estate)	50	45
RS (Single-Family)	50	45
RM (Medium Density)	50	45
RH (High Density)	55	50
RT (Residential Tourist)	55	50
(2) C (Commercial)	65	60
(3) I (Industrial)	70	65
(4) D (Downtown)	65	55
(5) A (Agricultural)	50	45
(6) OS (Open Space)	50	45

In addition to the sound level limits established above, there are established sound level limits for PD (planned development) base district zones. For any residential land use within a PD zone, the sound level limit is that limit which would be otherwise applicable in the residential district zone (RE, RS, RM, RH or RT) corresponding to density of the residential development in that PD zone.

For any nonresidential land use within a PD zone, the sound level limit is that limit corresponding to the C (commercial) or I (industrial) zone which would be applicable to that use if not subject to the PD zone. For the purposes of this section, a land use shall be that use shown on a duly approved planned development plan or specific plan. When property lines form the joint boundary of two (2) base district zones, the sound level limit shall be the arithmetic mean of the limit applicable to each of the two (2) zones.

4.0 NOISE ENVIRONMENT

4.1 Existing Noise Environment Onsite

Noise measurements were taken November 5, 2020 in the morning hours using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

Monitoring location 1 (ML1) was located along North River Road. The result of the noise level measurements are presented in Table 4-1. The noise measurements were monitored for a time period of 15 minutes during normal traffic conditions. The existing noise levels in the project area consisted primarily of traffic from adjacent North River Road. The ambient Leq noise level measured in the area of the project during the morning hours was found to be roughly 66 dBA Leq. The statistical indicators Lmax, Lmin, L10, L50 and L90, are given for the monitoring location. As can be seen from the L90 data, 90% of the time the noise level is 52 dBA from North River Road. The noise monitoring location is provided graphically in Figure 4-A on the following page.

Table 4-1: Measured Ambient Noise Levels

Measurement Identification	Main Noise Source	Time	Noise Levels (dBA)					
			Leq	Lmin	Lmax	L10	L50	L90
M1	North River Road	9:15–9:45 a.m.	65.9	47.7	75.3	70.7	61.6	51.9
Source: Ldn Consulting, Inc. November 5, 2019								

Figure 4-A: Ambient Noise Monitoring Location

4.2 Onsite Roadway Noise

The primary source of noise impacts to the project site is from vehicular noise from North River Road. The projected roadway noise levels from vehicular traffic were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. Table 4-2 presents the roadway parameters used in the analysis including the average daily traffic volumes, speeds and the traffic flow distribution (vehicle mix). The vehicle mix provides the distribution percentages of automobile, medium and heavy trucks for input into the FHWA Model.

Table 4-2: Traffic Parameters

Roadway	Year	Average Daily Traffic (ADT)	Peak Hour Volume	Modeled Speeds (MPH)	Vehicle Mix %		
					Auto	Medium Trucks	Heavy Trucks
North River Road	2035	26,300[1]	2,630	45	96	2	2
[1] Source: LOS Engineering, Draft Vehicle Miles Traveled and Local Transportation Study, 2020							

Based on the exterior noise model for the roadways, the worst-case exterior noise level at the building facades nearest the roadways is 73.4 dBA CNEL along North River Road at a distance of 50-feet from the centerline. The model does not take into account any noise reductions for existing or proposed structures, barriers or topographic features. According to the City of Oceanside General Plan Noise Element, North River Road is considered a 4-lane Major Arterial with raised center median and a right-of-way width of 100-feet. Minimum site perimeter setback is 20-feet from North River Road according to the PBD Plan. Therefore, proposed residential rear yards would be set back a minimum 80 feet from the centerline of North River Road. Based on the increased distance from the roadway, the noise level would be reduced to a worst case exterior noise level of 71.4 dBA CNEL. The modeling results are provided as ***Attachment A***.

Based upon these findings noise mitigation is necessary to comply with the City's 65 dBA Noise standards. It was determined that noise mitigation in the form of 7-foot barriers are necessary at the top of slope along North River Road for the proposed units adjacent to the roadway. The location and height of the required barrier is shown in Figure 4-B. The barrier should be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials.

Figure 4-B: Noise Barrier Locations and Heights

The City of Oceanside as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above 60 dBA CNEL in order to ensure a 45 dBA CNEL interior noise level. As determined above, façades noise levels along North River Road are above 60 dBA CNEL. Therefore, the proposed project site will require a final noise study be prepared prior to the issuance of the first building permit for all lots. This final noise report would identify the interior noise requirements based upon the architectural floor plans showing the room dimensions and window, door and wall details.

4.3 Offsite Project Related Transportation Noise Levels

The off-site project-related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level over many distances until the distance to the desired noise contour(s) are found.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore, the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Hard site conditions consist of concrete, asphalt, and hard pack dirt, while soft site conditions exist in areas having slight grade changes, landscaped areas, and vegetation. Hard site conditions, to be conservative, were used to develop the identified noise contours and analyze noise impacts along all roadway segments.

Community noise level changes greater than 3 dBA are often identified as audible and considered potential significant, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dBA, residents who are very sensitive to noise may perceive a slight change. There is no scientific evidence available to support the use of 3 dBA as the significance threshold; community noise exposures are typically over a long time period rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely greater than 1 dBA and 3 dBA appears to be appropriate for most people. For the purposes for this analysis, a direct roadway noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA CNEL and if the project increases noise levels above an unacceptable noise level per the City's General Plan in the area adjacent to the roadway segment.

Direct Traffic Noise Impacts

To determine if direct off-site noise level increases associated with the development of the project will create noise impacts, the noise levels for the near term conditions were compared with the noise level increase from when the project is full built. Utilizing the project's traffic assessment (Source: LOS Engineering, Inc., 2020), noise contours were developed for the following traffic scenarios:

Existing: Current day noise conditions without construction of the project.
Existing Plus Project: Current day noise conditions plus the completion of the project.
Existing vs. Existing Plus Project: Comparison of the project related noise level increases.

The noise levels and reference distances to the 65 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 4-3 for the Existing Scenario and in Table 4-4 for the Existing Plus Project Scenario.

Table 4-3: Existing Noise Levels without Project

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	65 dBA CNEL Contour Distance (Feet)
Douglas Drive				
N. River Rd to Rainier Way	35,915	50	75.8	264
Rainier Way to Pala Rd	36,579	50	75.9	267
Pala Rd to El Camino Real	37,080	50	76.0	270
El Camino Real to Mission Ave	23,305	40	71.8	142
Mission Ave to SR-76	20,142	40	71.1	129
North River Road				
Douglas Dr to Avenida Descanso	20,223	45	72.3	153
Avenida Descanso to Riverview Way	18,195	45	71.8	143
Riverview Way to Calle Montecito	19,589	45	72.2	150
Calle Montecito to Redondo Dr	20,485	45	72.4	155
Redondo Dr to College Blvd	20,383	45	72.3	154
College Blvd to Vandegrift Blvd	31,503	45	74.2	206
College Boulevard				
N. River Rd to Buchanon Park	35,485	40	73.6	187
Buchanon Park to Adams St	34,426	45	74.6	218
Adams St to Via Cupeno	34,479	45	74.6	219
Via Cupeno to SR-76	41,981	50	76.5	293
SR-76				
Foussat Rd to Douglas Dr	41,500	65	79.2	444
Douglas Dr to Rancho Del Oro	46,500	65	79.7	479
Frazee Rd to College Blvd	41,000	65	79.2	440
College Blvd to N. Santa Fe	46,000	65	79.7	475
[1] Source: Project Traffic study prepared by LOS Engineering, Inc., 2020				

Table 4-4: Existing + Project Noise Levels

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	65 dBA CNEL Contour Distance (Feet)
Douglas Drive				
N. River Rd to Rainier Way	37,483	50	76.0	272
Rainier Way to Pala Rd	38,147	50	76.1	275
Pala Rd to El Camino Real	38,648	50	76.2	277
El Camino Real to Mission Ave	24,233	40	72.0	145
Mission Ave to SR-76	20,686	40	71.3	131
North River Road				
Douglas Dr to Avenida Descanso	21,823	45	72.6	161
Avenida Descanso to Riverview Way	19,795	45	72.2	151
Riverview Way to Calle Montecito	21,189	45	72.5	158
Calle Montecito to Redondo Dr	22,085	45	72.7	163
Redondo Dr to College Blvd	21,823	45	72.6	161
College Blvd to Vandegrift Blvd	31,823	45	74.3	207
College Boulevard				
N. River Rd to Buchanon Park	36,605	40	73.7	191
Buchanon Park to Adams St	35,546	45	74.7	223
Adams St to Via Cupeno	35,567	45	74.7	223
Via Cupeno to SR-76	42,973	50	76.6	298
SR-76				
Foussat Rd to Douglas Dr	42,012	65	79.3	447
Douglas Dr to Rancho Del Oro	46,532	65	79.7	479
Frazee Rd to College Blvd	41,032	65	79.2	440
College Blvd to N. Santa Fe	46,288	65	79.7	477

[1] Source: Project Traffic study prepared by LOS Engineering, Inc., 2020

Table 4-5 presents the comparison of the Existing Year with and without Project related noise levels. The overall roadway segment noise levels will increase from 0.0 dBA CNEL to 0.4 dBA CNEL with the development of the project. Note that the values given do not take into account the effect of any noise barriers, structures, or topography that may affect roadway noise levels. The Project does not create a direct noise increase of more than 3 dBA CNEL on any roadway segment. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

Table 4-5: Existing vs. Existing + Project Noise Levels

Roadway Segment	Existing Noise Level @ 50-feet (dBA CNEL)	Existing + Project Noise Level @ 50-feet (dBA CNEL)	Difference (dBA CNEL)
Douglas Drive			
N. River Rd to Rainier Way	75.8	76.0	0.2
Rainier Way to Pala Rd	75.9	76.1	0.2
Pala Rd to El Camino Real	76.0	76.2	0.2
El Camino Real to Mission Ave	71.8	72.0	0.2
Mission Ave to SR-76	71.1	71.3	0.1
North River Road			
Douglas Dr to Avenida Descanso	72.3	72.6	0.3
Avenida Descanso to Riverview Way	71.8	72.2	0.4
Riverview Way to Calle Montecito	72.2	72.5	0.3
Calle Montecito to Redondo Dr	72.4	72.7	0.3
Redondo Dr to College Blvd	72.3	72.6	0.3
College Blvd to Vandegrift Blvd	74.2	74.3	0.0
College Boulevard			
N. River Rd to Buchanon Park	73.6	73.7	0.1
Buchanon Park to Adams St	74.6	74.7	0.1
Adams St to Via Cupeno	74.6	74.7	0.1
Via Cupeno to SR-76	76.5	76.6	0.1
SR-76			
Foussat Rd to Douglas Dr	79.2	79.3	0.1
Douglas Dr to Rancho Del Oro	79.7	79.7	0.0
Frazee Rd to College Blvd	79.2	79.2	0.0
College Blvd to N. Santa Fe	79.7	79.7	0.0
[1] Source: Project Traffic study prepared by LOS Engineering, Inc., 2020			

Cumulative Traffic Noise Levels

To determine if cumulative off-site noise level increases associated with the development of the Project and other planned or permitted projects in the vicinity will create noise impacts. The noise levels for the near-term Project Buildout and other planned and permitted projects were compared with the existing conditions. Utilizing the Project's traffic assessment (Source: LOS Engineering, Inc., 2020) noise contours were developed for the following traffic scenarios:

Existing: Current day noise conditions without construction of the project.

Existing Plus Cumulative Projects Plus Project: Current day noise conditions plus the completion of the project and the completion of other permitted, planned projects or approved ambient growth factors.

Existing vs. Existing Plus Cumulative Plus Project: Comparison of the existing noise levels and the related noise level increases from the combination of the project and all other planned or permitted projects in the vicinity of the site.

The existing noise levels and reference distances to the 65 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 4-3 above for the Existing Scenario. The near-term cumulative noise conditions are provided in Table 4-6. No noise barriers or topography that may affect noise levels were incorporated in the calculations. Note that the values given do not take into account the effect of any noise barriers, structures, or topography that may affect roadway noise levels.

Table 4-6: Existing + Near Term + Project Noise Levels

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	65 dBA CNEL Contour Distance (Feet)
Douglas Drive				
N. River Rd to Rainier Way	37,140	50	76.0	270
Rainier Way to Pala Rd	37,862	50	76.1	273
Pala Rd to El Camino Real	38,491	50	76.1	276
El Camino Real to Mission Ave	24,556	40	72.0	147
Mission Ave to SR-76	21,083	40	71.3	132
North River Road				
Douglas Dr to Avenida Descanso	21,399	45	72.5	159
Avenida Descanso to Riverview Way	19,361	45	72.1	149
Riverview Way to Calle Montecito	20,755	45	72.4	156
Calle Montecito to Redondo Dr	21,651	45	72.6	160
Redondo Dr to College Blvd	21,549	45	72.6	160
College Blvd to Vandegrift Blvd	36,554	45	74.9	227
College Boulevard				
N. River Rd to Buchanon Park	39,503	40	74.1	201
Buchanon Park to Adams St	38,458	45	75.1	235
Adams St to Via Cupeno	38,611	45	75.1	236
Via Cupeno to SR-76	46,099	50	76.9	312
SR-76				
Foussat Rd to Douglas Dr	45,100	65	79.6	469
Douglas Dr to Rancho Del Oro	49,347	65	80.0	498
Frazee Rd to College Blvd	43,864	65	79.5	460
College Blvd to N. Santa Fe	49,247	65	80.0	497
[1] Source: Project Traffic study prepared by LOS Engineering, Inc., 2020				

The overall cumulative roadway segment noise levels will increase from 0.1 dBA CNEL to 0.5 dBA CNEL with the development of the Project and all the cumulative projects as shown in Table 4-7 below. Therefore, the Project's contributions to off-site roadway noise increase would not be considered cumulatively considerable and would not cause any significant impacts.

Table 4-7: Existing vs. Near Term + Project Noise Levels

Roadway Segment	Existing Noise Level @ 50-feet (dBA CNEL)	Near Term + Project Noise Level @ 50-feet (dBA CNEL)	Difference (dBA CNEL)
Douglas Drive			
N. River Rd to Rainier Way	75.8	76.0	0.1
Rainier Way to Pala Rd	75.9	76.1	0.1
Pala Rd to El Camino Real	76.0	76.1	0.2
El Camino Real to Mission Ave	71.8	72.0	0.2
Mission Ave to SR-76	71.1	71.3	0.2
North River Road			
Douglas Dr to Avenida Descanso	72.3	72.5	0.2
Avenida Descanso to Riverview Way	71.8	72.1	0.3
Riverview Way to Calle Montecito	72.2	72.4	0.3
Calle Montecito to Redondo Dr	72.4	72.6	0.2
Redondo Dr to College Blvd	72.3	72.6	0.2
College Blvd to Vandegrift Blvd	74.2	74.9	0.6
College Boulevard			
N. River Rd to Buchanon Park	73.6	74.1	0.5
Buchanon Park to Adams St	74.6	75.1	0.5
Adams St to Via Cupeno	74.6	75.1	0.5
Via Cupeno to SR-76	76.5	76.9	0.4
SR-76			
Foussat Rd to Douglas Dr	79.2	79.6	0.4
Douglas Dr to Rancho Del Oro	79.7	80.0	0.3
Frazee Rd to College Blvd	79.2	79.5	0.3
College Blvd to N. Santa Fe	79.7	80.0	0.3
[1] Source: Project Traffic study prepared by LOS Engineering, Inc., 2020			

5.0 CONSTRUCTION NOISE LEVELS

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment includes haul trucks, water trucks, graders, dozers, loaders, and scrapers and can reach relatively high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

Because the City of Oceanside does not have property line standards for construction, the City of San Diego 75 dBA Leq standard is utilized in the analysis. Division 4 of Article 9.5 of the City of San Diego Municipal Code addresses the limits of disturbing or offensive construction noise. The Municipal Code states that with the exception of an emergency, it should be unlawful to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from 60 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 75 dBA measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor, and reduced to 63 dBA at 200 feet from the source.

Using a point-source noise prediction model, calculations of the expected construction noise levels were completed. The essential model input data for these performance equations include the source levels of the equipment, source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day (also referred to as the duty-cycle), and any transmission loss from topography or barriers.

5.1 Potential Construction Noise Impact

Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst-case noise levels from the construction equipment operations would occur during the base operations (grading/site preparation). The Planned Development and Mixed Use Plan identifies that grading will be balanced within each Planning Area in order to allow phased development while minimizing impacts across the Plan area. Due to physical constraints and normal site preparation operations, most of the equipment will be spread out over the site. Based upon the proposed site plan, the majority of the grading operations will occur more than 200 feet from the nearest property lines.

Therefore, the worst-case noise condition would occur when the construction equipment is working in close proximity to each other at an average distance of approximately 200 feet from the property lines. The noise levels utilized in this analysis are shown in Table 5-1. The amount of time the equipment will be utilized over an 8-hour period at this distance from the property line is also given and factored into the average noise level calculations. This is referred to as the duty-cycle.

Table 5-1: Construction Noise Levels

Equipment Type	Quantity Used	Source @ 50 Feet (dBA)	Cumulative Noise Level @ 50 Feet (dBA)
Tractor/Backhoe/Loader	1	72	72.0
Dozer Cat	1	74	74.0
Grader	2	73	76.0
Water Trucks	2	70	73.0
Scraper	2	75	78.0
		Cumulative Level	**82.2**
		Distance to Sensitive Use	**115**
		Noise Reduction due to Distance	**-7.2**
		Property Line Noise Level	**74.9**

5.2 Construction Noise Conclusions

As can be seen in Table 5-1, none of the proposed equipment will exceed the City of Oceanside 85 dBA standard at 100 feet from the source. The project will meet the City of Oceanside's 85 dBA standard at 100 feet from the source for all proposed equipment and no impacts are anticipated. Accordingly, impacts will be less than significant and no mitigation measures are required.

5.3 Construction Vibration Findings

The nearest vibration-sensitive uses are the residences located 50 feet or more from the proposed construction. The anticipated construction equipment will be spread out over the site working in different portion of the site as needed. For example: a single dozer may be utilized near the project boundary while the other equipment is working on the opposite side of the site. Table 5-2 lists the average vibration levels that would be experienced at the nearest vibration sensitive land uses from the temporary construction activities. Vibration levels were assessed at a distance of 50 feet to be conservative.

Table 5-2: Vibration Levels from Construction Activities (Residential Receptors)

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS Velocity at 25 Feet (in/sec)	Approximate Velocity Level at 50 Feet (VdB)	Approximate RMS Velocity at 50 Feet (in/sec)
Small bulldozer	58	0.003	49.0	0.0011
Jackhammer	79	0.035	70.0	0.0124
Loaded trucks	86	0.076	77.0	0.0269
Large bulldozer	87	0.089	78.0	0.0315
		FTA Criteria	80	0.2
		Significant Impact?	**No**	**No**
[1] PPV at Distance D = PPVref x $(25/D)^{1.5}$				

The FTA has determined vibration levels that would cause annoyance to a substantial number of people and potential damage to building structures. The FTA criterion for vibration induced structural damage is 0.20 in/sec for the peak particle velocity (PPV). Project construction activities would result in PPV levels below the FTA's criteria for vibration induced structural damage. Therefore, project construction activities would not result in vibration induced structural damage to residential buildings near the demolition and construction areas. The FTA criterion for infrequent vibration induced annoyance is 80 Vibration Velocity (VdB) for residential uses. Construction activities would generate levels of vibration that would not exceed the FTA criteria for nuisance for nearby residential uses. Therefore, vibration impacts would be less than significant.

5.4 Vibration Findings

Given attenuation of vibration velocities with distance, the RMS vibration velocity and peak particle velocity at the nearest existing residence would be about 78 VdB and 0.03 inch per second, respectively. Based on the construction vibration human annoyance criterion of 80 VdB published by the FTA, the vibration levels for the construction activity on nearby residential structures will not be significant.

6.0 OPERATIONAL NOISE LEVELS

This section examines the potential stationary noise source levels associated with the development and operation of the proposed project. Noise from a fixed or point source drops off at a rate of 6 dBA for each doubling of distance. Which means a noise level of 70 dBA at 5-feet would be 64 dBA at 10-feet and 58 dBA at 20-feet. A review of the proposed project indicates that noise sources such as residential activities are the primary sources of stationary noise.

6.1 Property Line Noise Levels

The required sound levels at a Project's property boundary depend on the time of day and the land use zone. The Project proposes a zone change to residential. The existing and proposed residential uses allow an equivalent one-hour sound level of 50 dBA Leq-h between 7 A.M. and 9:59 P.M. and 45 dBA from 10 P.M. to 6:59 A.M at the property lines. The section will analyze the noise levels at the property line to determine the worst case noise levels, any impacts and necessary mitigation solutions, if needed.

Residential Activities

Noise generated from residential uses is generally from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. Noise impacts are more likely to occur in the more densely developed areas of the project site where residences would be closer together and neighbors would be more likely to hear a neighbor's dog or music. Section 38.16 of the Oceanside Municipal Code prohibits nuisance noise at any time which causes discomfort or annoyance to reasonable persons of normal sensitivity. Compliance with the noise ordinance would limit exposure to excessive nuisance noise. The Oceanside Police Department enforces the nuisance noise provisions of the noise ordinance. Additionally, nuisance noises would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect the receptors at the same time. Instances of nuisance noise would be addressed on an individual case basis by the Oceanside Police Department. Therefore, nuisance noise from the proposed residences would be less than significant.

The project site would be landscaped; therefore, regular maintenance would be required. Maintenance activities would include the use of mowers, trimmers, and blowers, which would result in intermittent short-term temporary noise increases. Maintenance activities are permitted uses and would be subject to the daytime one-hour Leq noise limits in residential neighborhoods. Maintenance equipment would not be operating at any one location for more than a few minutes and it is not likely that the equipment would be operating all at the same time. Due to the limited amount of time the equipment would be operating in one location.

Therefore, operation of maintenance equipment would generally not exceed the hourly noise level limit at adjacent residential receptors and no impacts are anticipated.

6.2 Conclusions

Based upon the operational noise levels none of the proposed noise sources are anticipated to exceed the property line standards at the surround property lines. Therefore, the proposed development related operational noise levels comply with the City's noise standards. Impacts would be less than significant and no mitigation is required.

7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the noise and vibration environment and impacts within and surrounding the proposed North River Road development. The information contained in this report was based on the best available data at the time of preparation.

DRAFT

Jeremy Louden, Principal
Ldn Consulting, Inc.
(760) 473-1253
jlouden@ldnconsulting.net

Date October 2, 2020

ATTACHMENT A

FUTURE EXTERIOR NOISE MODEL INPUT AND
OUTPUT FILES

Attachment: Roadway Noise Levels

Project Name:	North River Road	Date:	24-Aug-20
Project Number:	15-49	Location:	Oceanside

Traffic Volumes, Mix and Speeds

	Autos	Med. Trucks	Heavy Trucks
Mix Ratio by Percent	96.0	2.0	2.0

Propagation Rule Hard

Roadway	**ADT**	**Speed MPH**	**CNEL @ 50 Feet**	**60 CNEL (Feet)**
North River Road	26,300	45	73.4	1,103

Noise Reduction due to Distance

	Distance	**Reduction**	**Resultant Level**
North River Road	80	-2.04	71.4

Cumulative Noise Level **71.4** **dBA CNEL**

APPENDIX O
OCEANSIDE UNIFIED SCHOOL DISTRICT
CORRESPONDENCE

October 21, 2020

Rayna Del Rosario
Environmental Analyst
R.E.C. Consultants
2442 Second Avenue
San Diego, CA 92101

RE: Request of information for Environmental Review Document for North River Road Project

Dear Ms. Del Rosario

We received your request for information to complete an environmental review regarding the "North River Road Project" Parcel Numbers (APN) 157-060-40 and 157-060-17. These two existing parcels are located in the north/northeast portion of the City of Oceanside, north of State Route 76, on the south side of North River Road, with the approximate address of 4665 and 4617 North River Road.

The following information will cover:

Requests 1 and 2:
Beginning with the 2020-2021 school year, the Oceanside Unified School District Board of Education approved the following attendance boundaries for this subdivision, enrollment as of October 7, 2020 and the site capacity for each:

Libby Elementary School (grades K-5)
423 W. Redondo Drive
Oceanside, CA 92057
(760) 901-7000
Enrollment as of October 2, 2019: 598
Enrollment as of October 7, 2020: 411 During COVID-19 Restrictions
Site Capacity: 759

Martin Luther King, Jr. Middle School (grades 6-8)
1290 Ivey Ranch Road
Oceanside, CA 92057
(760) 901-8800
Enrollment as of October 2, 2019: 1,384
Enrollment as of October 7, 2020: 1,327 During COVID-19 Restrictions
Site Capacity: 1,683

El Camino High School (grades 9-12)

Shannon Soto, Ed.D., Deputy Superintendent of Administrative Services
2111 Mission Avenue • Oceanside, CA 92058-2326
Phone: (760) 966-4047 • shannon.soto@oside.us

400 Rancho Del Oro Road
Oceanside, CA 92057
(760) 901-8200
Enrollment as of October 2, 2019: 2,896
Enrollment as of October 7, 2020: 2,828 During COVID-19 Restrictions
Site Capacity: 2,862

Request 3:
Based on the information that you provided, Oceanside Unified School District existing school capacity can adequately meet the needs of our current student population, as well as the possible incoming students from this proposed development.

Request 4:
We do have generation rates for grades K-12 for residential land uses.

Request 5:
Oceanside Unified School District currently does not have any improvements or additions planned for the schools that serve the project area.

Request Number 6:
We have no recommendations that might help reduce any potential impacts to Oceanside Unified School District that would be generated due to the proposed project.

Request Number 7:
Currently Oceanside Unified School District impact fees for this project would be Developer Fees.

If you need further information, please contact Renee Fernandez, Business Services and Facility Technician, at (760) 966-4022 or rfernandez@oside.us.

Sincerely,

S Soto, EdD

Shannon Soto, Ed.D
Deputy Superintendent of Administrative Services

Attachment:
Letter for Environmental Impact Information

APPENDIX P
LOCAL TRANSPORTATION STUDY

Tierra Norte Residential Development Plan
Southside of N. River Rd btw Ave Descanso and Calle Montecito
City of Oceanside
February 4, 2022

Local Transportation Study

Prepared for:

The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008

Prepared by Justin Rasas (RCE 60690) with:

LOS Engineering, Inc.
11622 El Camino Real Suite100 San Diego, CA 92130
Phone 619-890-1253

Job #1533

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Executive Summary

Tierra Norte Residential Development Plan

This Local Transportation Study (LTS) determines if there are measurable transportation impacts based on the City of Oceanside local impact thresholds. A separate Vehicle Miles Traveled (VMT) analysis is provided under separate cover to satisfy the California Environmental Quality Act (CEQA) requirements. This report provides a non-CEQA analysis as required by the City of Oceanside.

The project located at 4617 and 4665 N. River Rd is a General Plan Amendment (GPA) and rezone from light industrial uses to residential on two parcels totaling 25.6 acres. The application includes a Planned Block Development Plan for a future residential development of up to 400 dwelling units; therefore, a site plan is not available at this step of the application process.

Pedestrian, Bicycle, Transit, and Traffic study elements were analyzed based on the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020 ("Traffic Guidelines").

The multi-modal analysis covered pedestrian, bicycle, and transit elements. A sidewalk does not exist along the project frontage on N. River Road; therefore, the project applicant will construct a sidewalk along the project frontage. No bicycle nor transit deficiencies were documented; therefore, no changes are proposed.

The traffic analysis included the analysis of AM peak hour, PM peak hour, and daily traffic volumes. The project at 400 dwelling units is calculated to generate 3,200 daily trips, 256 AM peak hour trips (51 inbound and 205 outbound), and 320 PM peak hour trips (224 inbound and 96 outbound) based on SANDAG traffic generation rates. Eight scenarios were analyzed, which included Existing, Existing plus Project, Near Term (nine cumulative projects), Near Term plus Project, Horizon Year 2035 Master Transportation Plan (MTP with Pala Road extension, Melrose extension, various segments expanded to 6 lanes, and Rancho Del Oro interchange), Horizon Year 2035 MTP plus Project, Horizon Year 2035 Alternative (reflects the current roadway network as it does not incorporate any proposed new roadways nor expanded roadways and is the same as the existing roadway network), and Horizon Year 2035 Alt plus Project. The City's Traffic Guidelines define how a project's non-CEQA transportation impact on the roadway system is considered to justify the need for roadway improvements that should be considered on a case-by-case basis. The project owner/permittee will be responsible for the following:

1) Construction of a complete and operating traffic signal along with fiber communication at the future project entrance on N. River Rd that will align with Riverview Way.
2) Construction of new sidewalks along the project frontage on N. River Rd to match existing sidewalks.
3) Mitigation at 11 off-site roadway locations. The timing and final mitigation will be determined when a final site plan has been submitted along with a new LTS. The impacted transportation locations based on 400 units are shown in **Table E-1**.

TABLE E-1: PROJECT TRANSPORTATION IMPACTS WITH 400 DWELLING UNITS

	Existing + Project	**Near Term + Project**	**Horizon Year 2035 MTP + Project**	**Horizon Year 2035 Alt + Project**
Intersections				
T-1 (Int #2): Douglas Dr/ Mission Ave	No Impact	No Impact	Transportation Impact*	Transportation Impact*
T-2 (Int #9): N. River/ Riverview	Transportation Impact**	Transportation Impact**	Transportation Impact**	Transportation Impact**
T-3 (Int #12): N. River Rd/ College Blvd	Transportation Impact*	Transportation Impact*	Transportation Impact*	Transportation Impact*
T-4 (Int #16): SR-76/ College Blvd	Transportation Impact*	Transportation Impact*	Transportation Impact*	Transportation Impact*
Segments				
T-5 (Seg #1): Douglas (N. River to Rainier)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-6 (Seg #2): Douglas (Rainier to Pala)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-7 (Seg #3): Douglas (Pala to El Camino Real)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-8 (Seg #4): Douglas (El Camino Real to Mission)	No Impact	Transportation Impact*	No Impact	Transportation Impact*
T-9 (Seg #12): College (N. River to Buchanon)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-10 (Seg #13): College (Buchanon to Adams)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-11 (Seg #14): College (Adams to Via Cupeno)	No Impact	No Impact	No Impact	Transportation Impact*
Total Transportation Impacts:	**8**	**9**	**4**	**11**

Notes: MTP: Master Transportation Plan. Alt: Alternative. Int: Intersection. Transportation impact if project traffic is calculated to exceed the allowable thresholds under LOS E or F conditions. *The timing and final mitigation will be determined when a final site plan has been submitted along with a new LTS. ** Project owner/permittee to install traffic signal with fiber communitation.

1.0 Introduction

This Local Transportation Study (LTS) determines if there are measurable transportation impacts based on the City of Oceanside local impact thresholds. A separate Vehicle Miles Traveled (VMT) analysis is provided under separate cover to satisfy the California Environmental Quality Act (CEQA) requirements. This report provides a non-CEQA analysis based on the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment,* August 2020.

The project is a General Plan Amendment (GPA) and rezone from light industrial uses to residential on two parcels for a total of 25.6 acres (Kawano parcel 9.7 acres and Nagata parcel 15.9 acres). The project is located at 4617 and 4665 N. River Rd in Oceanside, California. The application includes a Planned Block Development Plan which would establish development criteria and allow for future residential development of up to 400 dwelling units. Therefore, a site plan is not available for the project site at this step of the application process. A maximum of 400 dwelling units is proposed for a density of 15.6 units per acre (400 units / 25.6 acres).

The project area encompasses two parcels that are located on the south side of North River Road generally between Avenida Descanso and Calle Montecito. The site has historically been used for agricultural, packing, and shipping uses. The regional location of the project is shown in **Figure 1** with an aerial reference shown in **Figure 2**.

This report describes the existing roadway network in the vicinity of the project and includes a review of existing and proposed activities for weekday peak and daily traffic conditions when the project is completed. This study includes the following chapters:

1.0 Introduction
2.0 Alternative Transportation Analysis
3.0 Traffic Analysis

Figure 1: Project Location

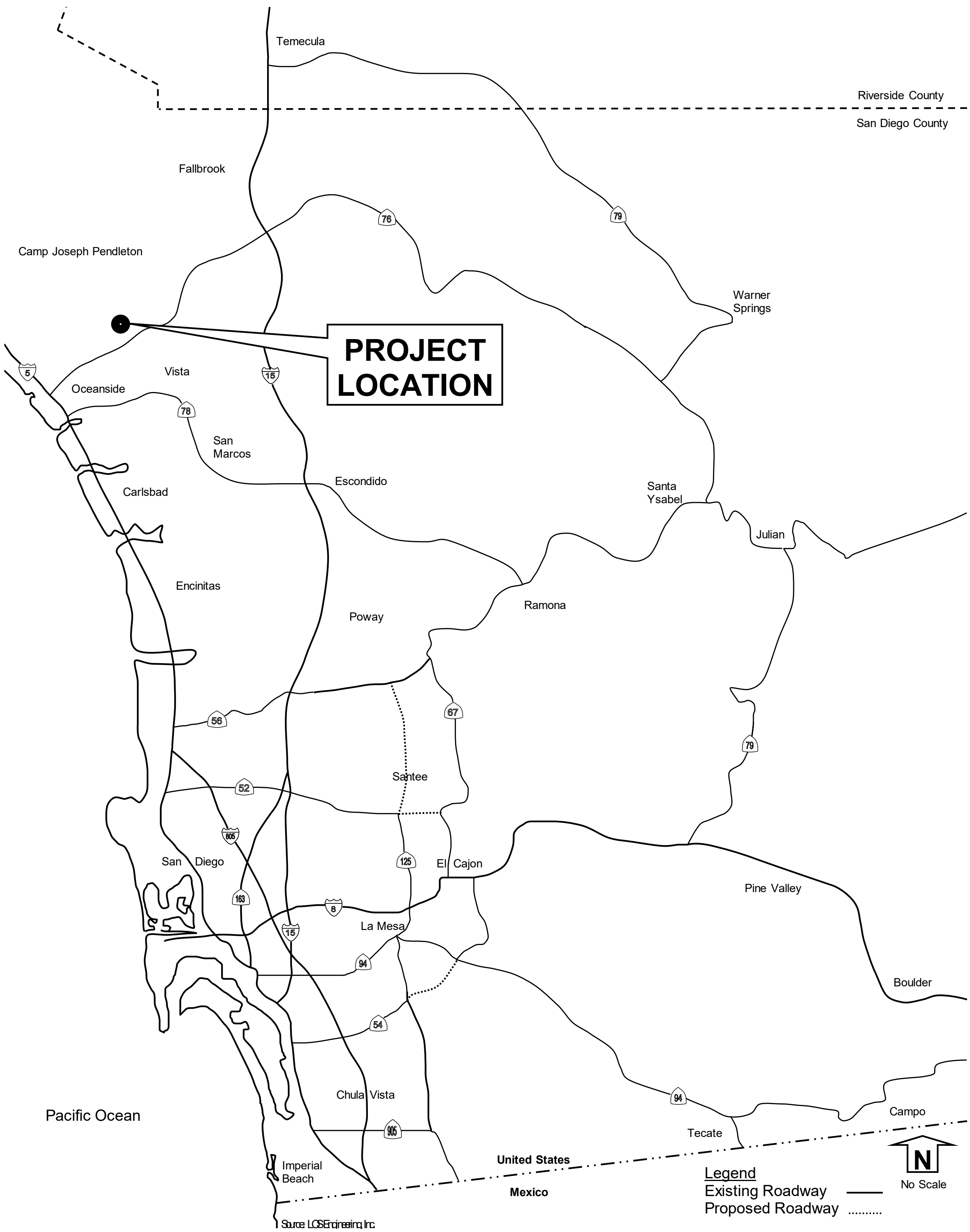


Figure 2: Aerial of Project Site

2.0 Alternative Transportation Analysis

The following transportation modes were analyzed based on criteria outlined in the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020:

1) Pedestrian: Documentation of pedestrian infrastructure available including any opportunities or deficiencies such as path obstructions or missing sidewalk from the project access points extending ½ mile walking distance or to the nearest intersection with a classified roadway/connection with a Class I path.

2) Bicycle: Documentation of bicycle infrastructure available including any opportunities or deficiencies such as bike lanes, bike buffers, or bike boxes from the project access points extending in each direction to the nearest intersection with a classified roadway or connection with a Class I path.

3) Transit: Identification of transit stops or routes existing within ½ mile walking distance of each pedestrian project access point.

2.1 Pedestrian

The pedestrian analysis consists of documenting pedestrian infrastructure available including any opportunities or deficiencies such as path obstructions or missing sidewalk from the project access points extending to the nearest intersection with a classified roadway or to a connection with a Class I path.

> <u>North River Dr</u> from Douglas Dr to roughly the driveway of the City of Oceanside Fire Department Station #5 has either non-contiguous or contiguous sidewalks on both sides of the street, except along the project frontage and along the north side of the street from Calle Montecito to the fire station. There were no major sidewalk obstructions observed along this segment.

The project will construct sidewalks along the project frontage adjacent to the public streets. The pedestrian infrastructure from the project access points extending to the nearest intersection with a classified roadway or ½ mile walking distance did not have any deficiencies, path obstructions, or missing sidewalk segments for the study area on the same street side as the project. However, there is a missing sidewalk on the north side of N. River Road between Calle Montecito and Redondo Dr. The pedestrian elements are shown in **Figure 3**.

Figure 3: Pedestrian Elements

Source: Google Maps

2.2 Bicycle

The bicycle analysis consists of documenting bicycle infrastructure available including any opportunities or deficiencies such as bike lanes, bike buffers, or bike boxes from the project access points extending in each direction to the nearest intersection with a classified roadway or connection with a Class I path.

> North River Dr from Douglas Dr to roughly the driveway of the City of Oceanside Fire Department Station #5 has an existing Class 2 bike lane shown in the *City of Oceanside Bicycle Master Plan 2017 Update.*

Excerpts from the *City of Oceanside Bicycle Master Plan 2017 Update* are included in **Appendix A**. The bicycle elements study area is shown in **Figure 4**.

Figure 4: Bicycle Elements

Source: Google Maps

2.3 Transit

The transit analysis includes identifying the closest transit routes and stops to the project. If the stops are within ½ mile walking distance of the project access, the condition of the closest stop amenities are described. North County Transit District (NCTD) lists Bus Routes 303 within ½ mile walking distance from the project access. Bus stops near the project site are located on N River Rd by Avenida Descanso, and on N River Rd by Calle Montecito.

The closest bus stop west of the project site is located on N River Rd at Avenida Descanso. The westbound bus stop is located on the north side of N River Rd and to the west of Avenida Descanso. The eastbound bus stop is located on the south side of N River Rd east of Avenida Descanso. Both bus stops include a bench. Both bus stops are in good condition.

The closest bus stop east project site is located on N River Rd at Calle Montecito. The westbound bus stop is located on the north side of N River Rd west of Calle Montecito. The eastbound bus stop is located on the south side of N River Rd east of Calle Montecito. Both bus stops include a bench. Both bus stops are in good condition.

No transit improvements are proposed as part of this project. A summary of the service times is shown in **Table 1** for weekdays and **Table 2** for weekend days. The noted bus schedules are included in **Appendix B**.

TABLE 1: WEEKDAY BUS SERVICE OPERATIONS AND FREQUENCY

Bus Route	Weekday (Mon-Fri) Service Operations (Off-Peak Service Frequency Range)	7-9 AM Peak Hour Service Frequency	4-6 PM Peak Hour Service Frequency
Route 303	≈ 4:30 AM to ≈ 11:00 PM (≈ 15-30 minutes)	15 minutes	15 minutes

Notes: Above service times are summaries, thus please refer to Appendix D for exact service details.

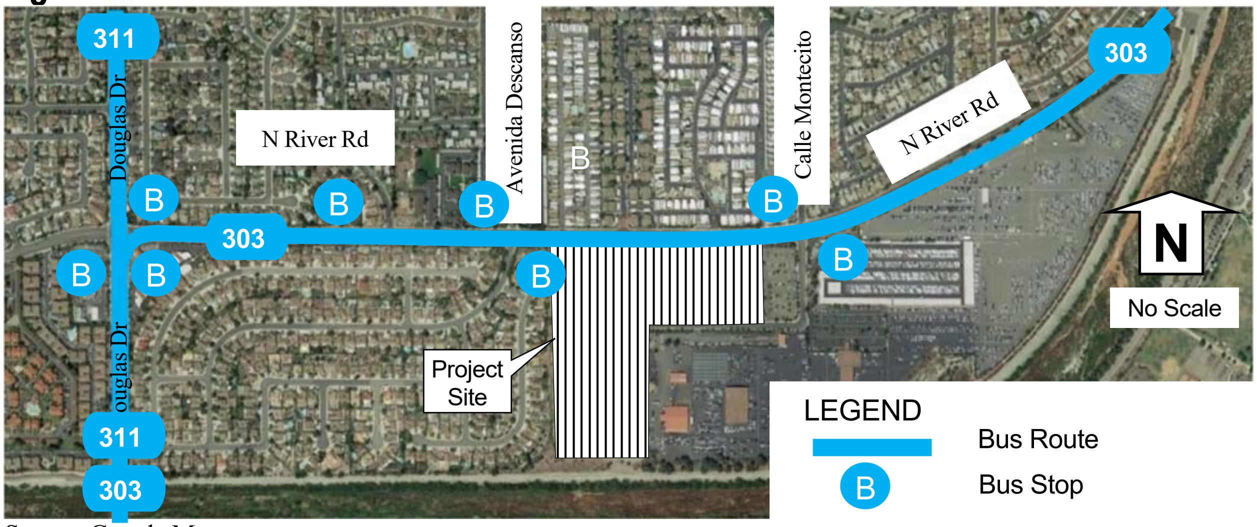
TABLE 2: WEEKEND BUS SERVICE OPERATIONS AND FREQUENCY

Bus Route	Saturday Service Operations (Service Frequency Range)	Sunday Service Operations (Service Frequency Range)
Route 303	≈ 6:00 AM to ≈ 11:00 PM (≈ 20-30 min.)	≈ 6:00 AM to ≈ 11:00 PM (≈ 20-30 min.)

Notes: Above service times are summaries, thus please refer to Appendix D for exact service details.

The nearby transit routes and bus stops are shown in **Figure 5**.

Figure 5: Transit Elements



Source: Google Maps

3.0 Traffic Analysis

The Local Transportation Study includes the analysis of specific study scenarios, methodology for the analysis of roadway operations, and determination of potential off-site improvements. Details for each of these parameters are include herein.

3.1 Study Area and Scenario Criteria

The project study area was determined by the limits or extent of where 50 peak hour project trips would travel to or from the site, which is based on the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020 Additionally, the study area can be identified by City staff.

For this project, the following intersections were analyzed as part of this study:

1) Douglas Dr/SR-76 (Signalized)
2) Douglas Dr/Mission Avenue (Signalized)
3) Douglas Dr/El Camino Real (Signalized)
4) Douglas Dr/Pala Road (Signalized)
5) Douglas Dr/Rainier Way (Signalized)
6) N. River Road/Douglas Drive (Signalized)
7) N. River Road/Avenida Descanso (Signalized)
8) N. River Road/Westwinds Mobile Home Park (Un-Signalized)
9) N. River Road/Riverview Way (Un-Signalized)
10) N. River Road/Calle Montecito (Signalized)
11) N. River Road/Redondo Drive (Signalized)
12) N. River Road/College Blvd (Signalized)
13) College Blvd/Buchanon Park (Un-Signalized)
14) College Blvd/Adams St (Signalized)
15) College Blvd/Via Cupeno (Signalized)
16) College Blvd/SR-76 (Signalized)
17) N. River Road/Vandergrift Blvd (Signalized)

The following street/expressway segments were analyzed as part of this study:

1) Douglas Drive from N. River Rd to Rainier Way
2) Douglas Drive from Rainier Way to Pala Rd
3) Douglas Drive from Pala Rd to El Camino Real
4) Douglas Drive from El Camino Real to Mission Ave
5) Douglas Drive from Mission Ave to SR-76
6) N. River Rd from Douglas to Avenida Descanso
7) N. River Rd from Avenida Descanso to Riverview Way
8) N. River Rd from Riverview Way to Calle Montecito
9) N. River Rd from Calle Montecito to Redondo
10) N. River Rd from Redondo to College
11) N. River Rd from College to Vandergrift
12) College Blvd from N. River Rd to Buchanon Park
13) College Blvd from Buchanon Park to Adams St
14) College Blvd from Adams St to Via Cupeno

15) College Blvd from Via Cupeno to SR-76
16) SR-76 from Foussat Rd to Douglas Dr
17) SR-76 from Douglas Dr to Rancho Del Oro Dr
18) SR-76 from Frazee Rd to College Blvd
19) SR-76 from College Blvd to N. Santa Fe Ave

The number of scenarios to be analyzed is typically based on the size of the project, the number of cumulative projects and whether the project conforms to current zoning. For this project, the following scenarios were included:

1) Existing Conditions
2) Existing plus Project Conditions
3) Near Term (Existing + Cumulative) Conditions
4) Near Term (Existing + Cumulative) plus Project Conditions
5) Horizon Year 2035 Base Master Transportation Roadway Plan Conditions
6) Horizon Year 2035 Base Master Transportation Roadway Plan plus project Conditions
7) Horizon Year 2035 Alternative Conditions
8) Horizon Year 2035 Alternative plus project Conditions

3.2 Traffic Analysis Criteria

The traffic analyses prepared for this study were based on the *Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections, street segments, and freeway segments were measured using the HCM LOS designations, which ranges from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. The LOS criteria for each roadway component are described below.

3.2.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the 6th Ed HCM using existing signal timing data. This process defines LOS in terms of **average control delay** per vehicle measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 10 (Trafficware Corporation). The 6th Ed HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 3**.

TABLE 3: INTERSECTION LEVEL OF SERVICE DEFINITIONS (6TH EDITION HCM)

Level of Service	Un-Signalized (TWSC and AWSC) Control Delay (sec/veh where v/c ≤ 1)	Signalized Control Delay (sec/veh where v/c ≤ 1)
A	0-10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

TWSC: Two Way Stop Control. AWSC: All Way Stop Control. Source: 6th Edition HCM (exhibit 20-2 for two way stop control, exhibit 21-8 for all way stop control, and exhibit 19-8 for signalized intersections).

3.2.2 Street Segments

The street segments were analyzed based on the functional classification of the roadway using the City of Oceanside *Average Daily Vehicle Trips* capacity lookup table. The roadway segment capacity and LOS standards used to analyze street segments are summarized in **Table 4**.

TABLE 4: STREET SEGMENT DAILY CAPACITY AND LOS (CITY OF OCEANSIDE)

Circulation Element Road Classification	Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	6	<30,000	<42,000	<60,000	<70,000	<80,000
Expressway	4	<25,000	<35,000	<50,000	<55,000	<60,000
Prime Arterial	6	<25,000	<35,000	<50,000	<55,000	<60,000
6-Lane Major Arterial	6	<20,000	<28,000	<40,000	<45,000	<50,000
5-Lane Major Arterial	5	<17,500	<24,500	<35,000	<40,000	<45,000
4-Lane Major Arterial	4	<15,000	<21,000	<30,000	<35,000	<40,000
Secondary Collector with TWLTL	4	<10,000	<14,000	<20,000	<25,000	<30,000
Secondary Collector no TWLTL	4	<9,000	<13,000	<18,000	<22,000	<25,000
Collector – Commercial Fronting	2	<5,000	<7,000	<10,000	<13,000	<15,000
Collector – Residential Fronting	2	<4,000	<5,500	<7,500	<9,000	<10,000
Local Street	2	na	na	<2,200*	na	na

Source: City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020. * City of Oceanside General Plan *Circulation Element*, September 2012 applied.

3.2.3 Transportation Impact Thresholds and Need for Roadway Improvements

A project Owner/Permittee may be required to provide an off-site improvement if the project traffic exceeds the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment,* August 2020 ("Traffic Guidelines") defined thresholds as shown in **Table 5** (excerpts included in **Appendix C**).

TABLE 5: DETERMINATION OF THE NEED FOR ROADWAY IMPROVEMENTS

Level of Service with Project	Allowable Increase Due to Project Effect				
	Freeways	Roadway Segments		Intersections	Ramp Metering
	V/C	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E & F	0.01	0.02	1	2	2*

Source: City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment* (August 2020), page 25.

A project effect is considered a non-CEQA transportation impact based on the City's Traffic Guidelines. The Traffic Guidelines define how a project's non-CEQA transportation impact on the roadway system is considered to justify the need for roadway improvements that should be considered as follows on a case-by-case basis:

1) Improvements should be consistent with the General Plan.
2) Improvements for transit, bike and pedestrian facilities should be given priority in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG.
3) Projects in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG, that are consistent with the General Plan at the time of project application, should not be denied due to the inability to provide roadway improvements (i.e., existing right of way is constrained, etc.)

3.3 Existing Conditions

This section describes the study area street system, existing daily roadway and peak hour intersection traffic volumes and existing LOS results.

3.3.1 Existing Street System

In the vicinity of the project, the following roadways were analyzed as part of this study, which are described below. The roadway classification was obtained from the City of Oceanside General Plan *Circulation Element*, September 2012 (excerpts included in **Appendix D**).

SR-76 is classified as an *Expressway* in the vicinity of the project and is currently built as a divided roadway with two travel lanes in each direction.

Douglas Drive is classified as a 4 lane *Major Arterial* from SR-76 to Mission Avenue, as a 4 lane *Secondary Collector* from Mission Avenue to El Camino Real, and as a 4 lane *Major Arterial* from El Camino Real to N. River Road. Douglas Drive is currently built as a 4 lane roadway with a raised median and intermittent left turn lanes from SR-76 to Mission Avenue, with a center Two Way Left Turn Lane (TWLTL) from Mission Avenue to El Camino Real, with a raised median and intermittent left turn lanes from El Camion Real to Pala Road, with painted center median (two sets of double yellow lines) from Pala Road to Rainier Way, and with a raised median and intermittent left turn lanes from Rainier Way to North River Road. The posted speed limit is generally 40 MPH from SR-76 to El Camino Real and generally 50 MPH north of El Camino Real.

North River Road is classified as a 4 lane *Major Arterial* from Douglas Drive to College Boulevard and as a 5 lane *Major Arterial* from College Boulevard to Vandergrift Boulevard. The majority of North River Road between Douglas Drive and College Boulevard is built as a 4 lane divided roadway. Some portions do not have a raised center median. From College Boulevard to Vandergrift Boulevard, N. River Road is built as a 5 lane divided roadway (3 northbound and 2 southbound lanes). The posted speed limit is 45 MPH with no parking signs posted on both sides of the roadway. Bike lanes are provided on both sides of the roadway.

College Boulevard is classified as a 4 lane *Major Arterial* from North River Road to Adams Street, as a 6 lane *Major Arterial* from Adams Street to SR-76, and as a 4 lane *Major Arterial* from SR-76 to Mesa Drive. College Boulevard is currently built as a 4 lane roadway with a raised median from North River Road to Buchanon Park, as a 4 lane roadway with painted center median (two sets of double yellow lines) from Buchanon Park to Adams Street, as a 6 lane roadway with a raised median from Adams Street to SR-76, as a 5 lane roadway (3 southbound lanes and 2 northbound lanes) with a raised median and intermittent turn lanes from SR-76 to Frazee Road, and as a 4 lane roadway with a raised median from Frazee Road to Mesa Drive. Bike lanes are provided on both sides of the roadway. The posted speed limit is generally 40 MPH from North River Road to Buchanon Park, 45 MPH between Adams Street and Via Cuperno, and 50 MPH from SR-76 to Mesa Drive.

3.3.2 Existing Traffic Volumes and LOS Analyses

Existing 7-9 AM and 4-6 PM peak hour traffic volumes and signal timing data are included in **Appendix E**, which included the following intersections with the date of collection noted below:

1) Douglas Dr/SR-76 (Thur, 9/20/18)
2) Douglas Dr/Mission Avenue (Thur, 9/20/18)
3) Douglas Dr/El Camino Real (Thur, 9/20/18)
4) Douglas Dr/Pala Road (Thur, 9/20/18)
5) Douglas Dr/Rainier Way (Thur, 9/20/18)
6) N. River Road/Douglas Drive (Thur, 9/20/18)
7) N. River Road/Avenida Descanso (Thur, 9/20/18)
8) N. River Road/Westwinds Mobile Home Park (Thur, 9/20/18)
9) N. River Road/Riverview Way (Thur, 9/20/18)
10) N. River Road/Calle Montecito (Thur, 9/20/186)
11) N. River Road/Redondo Drive (Thur, 9/20/18)
12) N. River Road/College Blvd (Thur, 9/20/18)
13) College Blvd/River Park (Thur, 9/20/18)
14) College Blvd/Adams St (Thur, 9/20/18)
15) College Blvd/Via Cupeno (Thur, 9/20/18)
16) College Blvd/SR-76 (Thur, 9/20/18)
17) College Blvd/Vandergrift Blvd (Thur, 9/20/18)

Existing daily traffic volumes are also included in Appendix B, which included the following segments with the date of collection noted below:

1) Douglas Drive from N. River Rd to Rainier Way (Thur, 9/20/18)
2) Douglas Drive from Rainier Way to Pala Rd (Thur, 9/20/18)
3) Douglas Drive from Pala Rd to El Camino Real (Thur, 9/20/18)
4) Douglas Drive from El Camino Real to Mission Ave (Thur, 12/13/18)
5) Douglas Drive from Mission Ave to SR-76 (Thur, 9/20/18)
6) N. River Rd from Douglas to Avenida Descanso (Thur, 9/20/18)
7) N. River Rd from Avenida Descanso to Riverview Way (Thur, 9/20/18)
8) N. River Rd from Riverview Way to Calle Montecito (Thur, 9/20/18)
9) N. River Rd from Calle Montecito to Redondo (Thur, 9/20/18)
10) N. River Rd from Redondo to College (Thur, 9/20/18)
11) N. River Rd from College to Vandergrift (Thur, 9/20/18)
12) College from N. River Rd to Buchanon Park (Thur, 9/20/18)
13) College from Buchanon Park to Adams St (Thur, 9/20/18)
14) College from Adams St to Via Cupeno (Thur, 9/20/18)
15) College from Via Cupeno to SR-76 (Thur, 9/20/18)
16) SR-76 from Foussat Rd to Douglas Dr (Caltrans 2017)
17) SR-76 from Douglas Dr to Rancho Del Oro Dr (Caltrans 2017)
18) SR-76 from Frazee Rd to College Blvd (Caltrans 2017)
19) SR-76 from College Blvd to N. Santa Fe Ave (Caltrans 2017)

The existing roadway conditions are shown in **Figure 6**, which also includes reference locations for the study intersections and segments. Existing AM, PM, and daily volumes are shown on **Figure 7.**

Figure 6: Existing Roadway Conditions

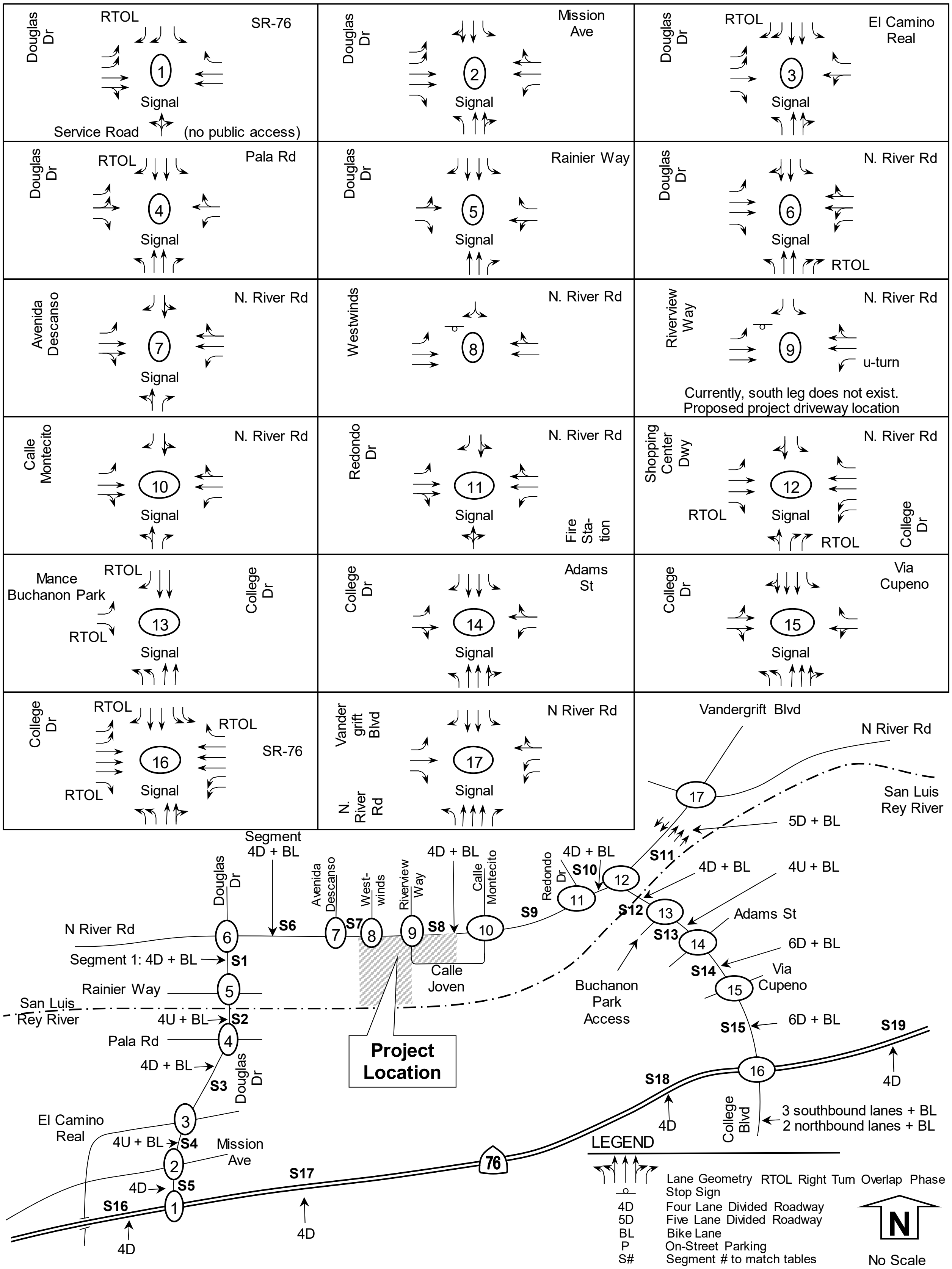
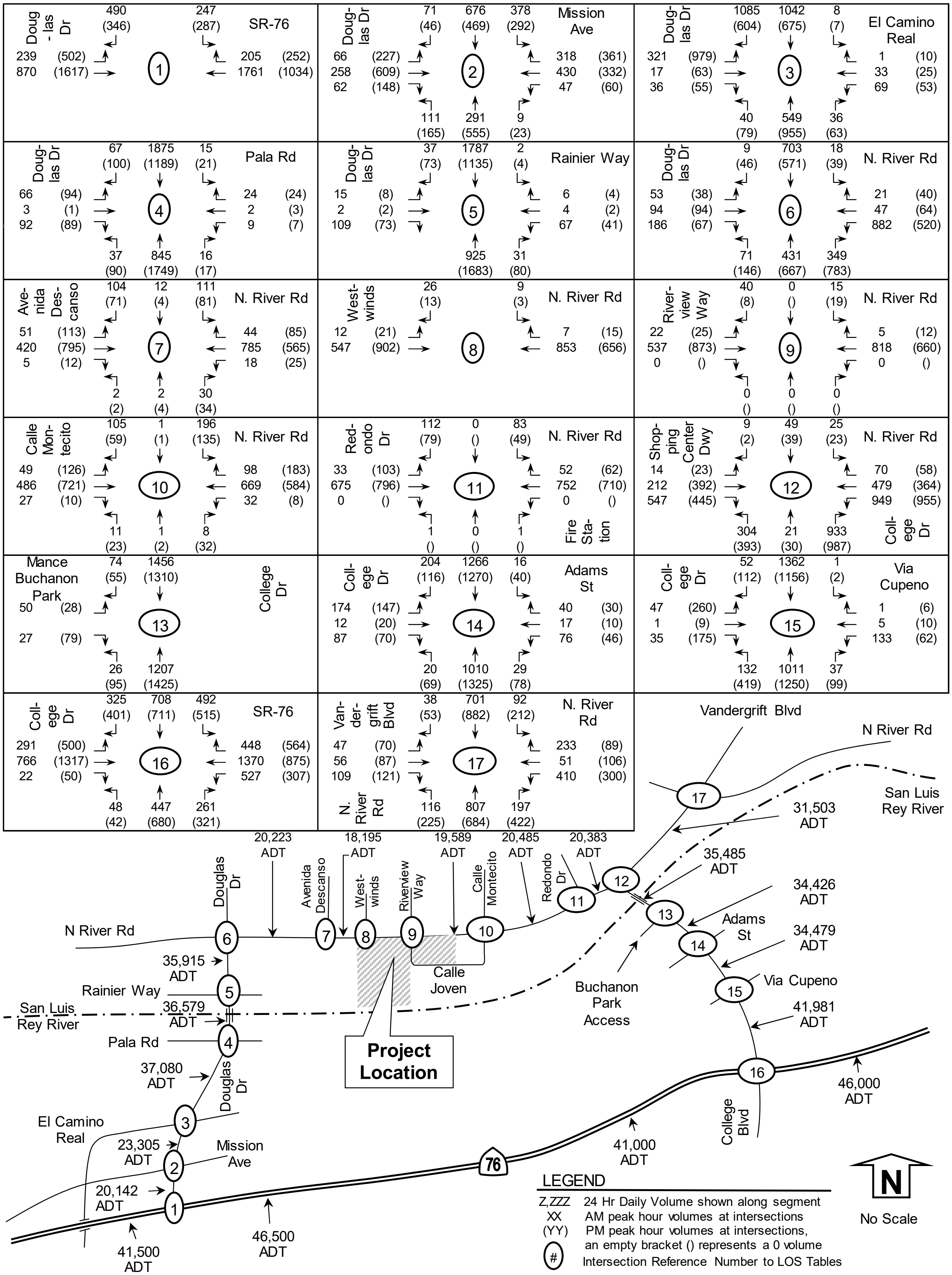


Figure 7: Existing Volumes



The LOS calculated for the intersections and segments are shown in **Tables 6 and 7**, respectively. Existing intersection LOS worksheets are included in **Appendix F**.

TABLE 6: EXISTING INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Existing Delay[2]	Existing LOS[3]
1) Douglas Dr at	All	AM	40.0	D
SR-76 (S)	All	PM	23.4	C
2) Douglas Dr at	All	AM	32.6	C
Mission Ave (S)	All	PM	40.6	D
3) Douglas Dr at	All	AM	18.7	B
El Camino Real (S)	All	PM	34.8	C
4) Douglas Dr at	All	AM	26.0	C
Pala Rd (S)	All	PM	21.1	C
5) Douglas Dr at	All	AM	29.0	C
Rainier Way (S)	All	PM	17.8	B
6) Douglas Dr at	All	AM	39.0	D
N. River Rd (S)	All	PM	24.5	C
7) N. River Rd at	All	AM	40.5	D
Avenida Descanso (S)	All	PM	12.2	B
8) N. River Rd at	SB LR	AM	17.0	C
Westwinds (U)	SB LR	PM	14.3	B
9) N. River Rd at	NB LR	AM	0.0	A
Riverview Way (U)	SB LR	AM	20.3	C
	NB LR	PM	0.0	A
	SB LR	PM	31.5	D
10) N. River Rd at	All	AM	19.3	B
Calle Montecito (S)	All	PM	19.0	B
11) N. River Rd at	All	AM	9.8	A
Redondo Dr (S)	All	PM	10.4	B
12) N. River Rd at	All	AM	46.4	D
College Blvd (S)	All	PM	51.5	D
13) College Blvd at	All	AM	7.9	A
Buchanon Park (S)	All	PM	8.9	A
14) College Blvd at	All	AM	17.1	B
Adams St (S)	All	PM	16.2	B
15) College Blvd at	All	AM	20.4	C
Via Cupeno (S)	All	PM	28.4	C
16) College Blvd at	All	AM	60.4	**E**
SR-76 (S)	All	PM	81.7	**F**
17) N. River Rd at	All	AM	22.7	C
Vandergrift Blvd (S)	All	PM	29.6	C

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service.
Bold LOS indicates unacceptable LOS.

TABLE 7: EXISTING SEGMENT LEVEL OF SERVICE

Segment	Classification (as built)	Existing			
		Daily Volume	LOS E Capacity	V/C	LOS
Douglas Drive					
1) N. River Rd to Rainier Way	4 Ln Major (4D)	35,915	40,000	0.90	**E**
2) Rainier Way to Pala Rd	4 Ln Major (4U)	36,579	40,000	0.91	**E**
3) Pala Rd to El Camino Real	4 Ln Major (4D)	37,080	40,000	0.93	**E**
4) El Camino Real to Mission Ave	4 Ln Secondary (4U)	23,305	30,000	0.78	D
5) Mission Ave to SR-76	4 Ln Major (4D)	20,142	40,000	0.50	B
North River Road					
6) Douglas Dr to Avenida Descanso	4 Ln Major (4D)	20,223	40,000	0.51	B
7) Avenida Descanso to Riverview Way	4 Ln Major (4U)	18,195	40,000	0.45	B
8) Riverview Way to Calle Montecito	4 Ln Major (4D)	19,589	40,000	0.49	B
9) Calle Montecito to Redondo Dr	4 Ln Major (4D)	20,485	40,000	0.51	B
10) Redondo Dr to College Blvd	4 Ln Major (4D)	20,383	40,000	0.51	B
11) College Blvd to Vandergrift Blvd	5 Ln Major (5D)	31,503	45,000	0.70	C
College Blvd					
12) N. River Rd to Buchanon Park	4 Ln Major (4D)	35,485	40,000	0.89	**E**
13) Buchanon Park to Adams St	4 Ln Major (4U)	34,426	40,000	0.86	D
14) Adams St to Via Cupeno	6 Ln Major (6D)	34,479	50,000	0.69	C
15) Via Cupeno to SR-76	6 Ln Major (6D)	41,981	50,000	0.84	D
SR-76					
16) Foussat Rd to Douglas Dr	4 Ln Expressway (4D)	41,500	60,000	0.69	C
17) Douglas Dr to Rancho Del Oro	4 Ln Expressway (4D)	46,500	60,000	0.78	C
18) Frazee Rd to College Blvd	4 Ln Expressway (4D)	41,000	60,000	0.68	C
19) College Blvd to N. Santa Fe	4 Ln Expressway (4D)	46,000	60,000	0.77	C

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Bold LOS indicates unaccecptable LOS.

Under Existing conditions, the following study elements are calculated to operate at LOS E/F:

1) Intersection #16. SR-76/College Blvd
2) Segment #1: Douglas Drive from N. River Rd to Rainier Way
3) Segment #2: Douglas Drive Rainier Way to Pala Rd
4) Segment #3: Douglas Drive from Pala Rd to El Camino Real
5) Segment #12: College Blvd from N. River Rd to Buchanon Park

3.4 Project Traffic Generation

The project is a Plan Block Development Plan that will require a General Plan Amendment and rezone from light industrial uses to residential on two parcels for a total of 25.6 acres (Kawano parcel 9.7 acres and Nagata parcel 15.9 acres). A maximum of 400 dwelling units is proposed for a density of 15.6 units per acre (400 units / 25.6 acres).

The site has historically been used for agricultural, packing, and shipping uses. A trip credit was not applied because the previous uses were not in operation when off-site traffic data was collected.

The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Based on the project acreage of 25.6 acres and proposed 400 dwelling units, the density is 15.6 units per acre. The SANDAG trip rate is 8 daily trips per dwelling unit for densities between 6 and 20 units per acre.

Using SANDAG traffic generation rates, the project is calculated to generate 3,200 daily trips, 256 AM peak hour trips (51 inbound and 205 outbound), and 320 PM peak hour trips (224 inbound and 96 outbound) as shown in **Table 8**.

TABLE 8: PROJECT TRAFFIC GENERATION

Proposed					AM					PM				
Land Use	Rate	Size & Units		ADT	%	Split		IN	OUT	%	Split		IN	OUT
Residential (density 6-20 du/ac)	8 /DU	400	DU	**3,200**	8%	0.2	0.8	51	205	10%	0.7	0.3	224	96
						Peak hour totals:		**256**					**320**	

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002. ADT-Average Daily Traffic.

<u>The final product may have a mix of small lot single family and multi-family units; therefore, the trip generation levels (ADT, AM & PM) as analyzed within this report will define the upper limit of traffic that can be generated by the final project type and unit count</u>.

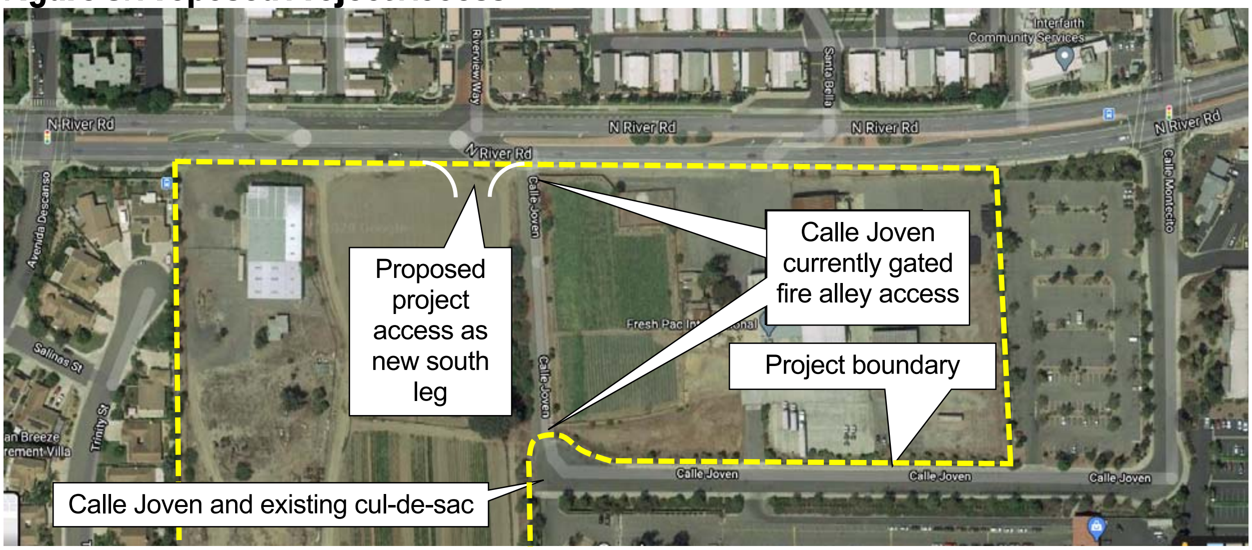
The proposed rezone will replace the existing industrial use with a proposed residential use. The existing industrial zoning could generate a range of traffic based on the type of industrial use. SANDAG trip rates document a range of 200 ADT/acre for an Industrial/Business Park (commercial included) to 90 ADT/acre for an Industrial/Business Park (no commercial). For the project site of 25.6 acres, the industrial trips could range from 5,120 ADT (Industrial/Business Park with commercial) to 2,304 ADT (Industrial/Business Park without commercial). The existing land use has the potential to generate more traffic than the proposed residential land use. However, this is a ground to plan analysis; therefore, a trip credit was not applied for the potential industrial land uses.

3.5 Project Access

Primary project access is proposed by constructing a south leg at the intersection of N. River Road/ Riverview Way. The project applicant proposed to signalize this intersection based on Signal Warrant Condition B "Interruption of Continuous Traffic", which is satisfied with the addition of project traffic. Signal warrant calculations for the project driveway and lane configurations are described within Section 3.16.2 of this report.

A portion of the southern project boundary borders Calle Joven. A secondary access is anticipated to connect with Calle Joven; however, a site design is not completed, thus the internal circulation and connection with Calle Joven has yet to be determined. There is currently a gated fire access alley labeled Calle Joven immediately east of Riverview Way that will be addressed in the final site design. The proposed project access, Calle Joven, and the gated fire access alley are shown in **Figure 8**.

Figure 8: Proposed Project Access



Source: Google Maps

3.6 Project Distribution and Assignment

Project trips were distributed to the adjacent roadway network based on a San Diego Association of Governments (SANDAG) Series 12 Select Zone Assignment (SZA) that was reviewed and adjusted by City staff. A copy of the SZA is included in **Appendix G**. The project distribution shown in **Figure 9**. The project assignment is shown in **Figure 10.**

Figure 9: Project Distribution

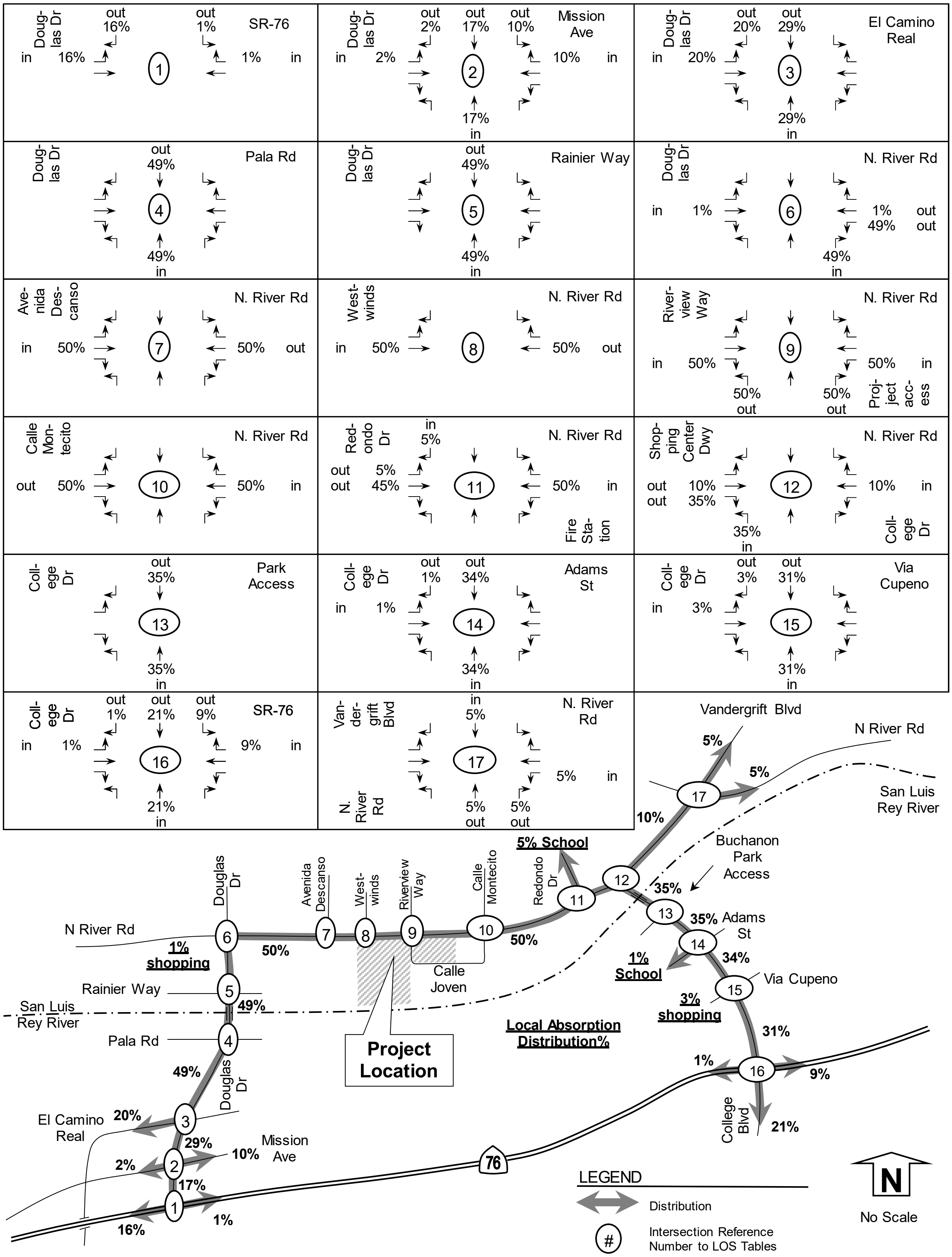
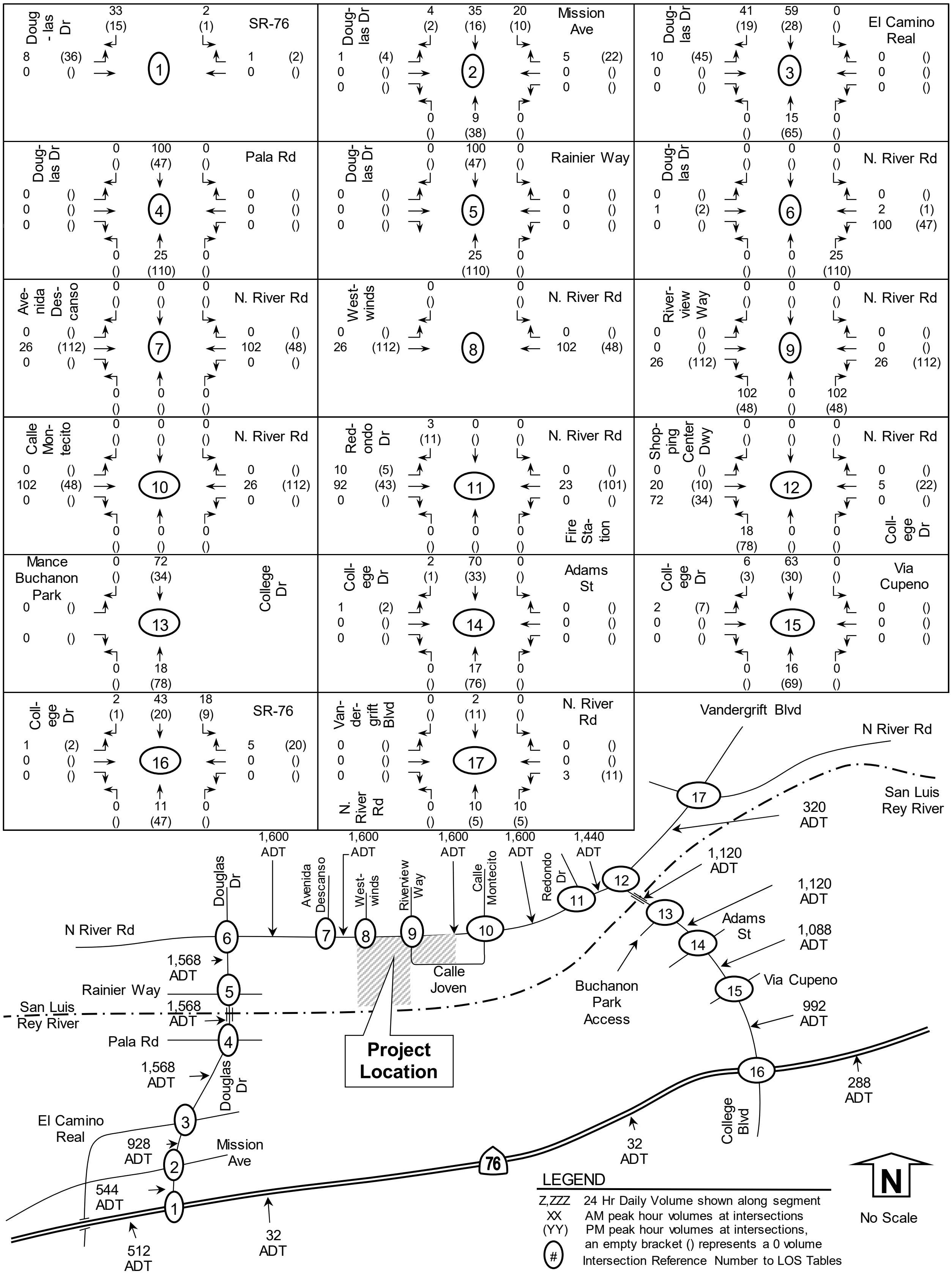


Figure 10: Project Volumes



3.7 Existing plus Project Conditions

This scenario analyzes the addition of project traffic onto the existing background traffic for AM, PM and daily traffic conditions. The peak hour intersection volumes and daily traffic volumes for this scenario of existing with project is shown in **Figure 11**. The intersection LOS calculated with the addition of project traffic is shown in **Table 9** with segment LOS shown in **Table 10.** Intersection LOS worksheets are included in **Appendix H**.

TABLE 9: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Study	Existing		Existing + Project			
(Analysis)[1]		Period	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Impact?[5]
1) Douglas Dr at	All	AM	40.0	D	40.5	D	0.5	No
SR-76 (S)	All	PM	23.4	C	24.5	C	1.1	No
2) Douglas Dr at	All	AM	32.6	C	34.4	C	1.8	No
Mission Ave (S)	All	PM	40.6	D	45.0	D	4.4	No
3) Douglas Dr at	All	AM	18.7	B	19.3	B	0.6	No
El Camino Real (S)	All	PM	34.8	C	39.7	D	4.9	No
4) Douglas Dr at	All	AM	26.0	C	34.2	C	8.2	No
Pala Rd (S)	All	PM	21.1	C	24.4	C	3.3	No
5) Douglas Dr at	All	AM	29.0	C	37.1	D	8.1	No
Rainier Way (S)	All	PM	17.8	B	23.8	C	6.0	No
6) Douglas Dr at	All	AM	39.0	D	42.0	D	3.0	No
N. River Rd (S)	All	PM	24.5	C	25.1	C	0.6	No
7) N. River Rd at	All	AM	40.5	D	42.7	D	2.2	No
Avenida Descanso (S)	All	PM	12.2	B	12.2	B	0.0	No
8) N. River Rd at	SB LR	AM	17.0	C	19.2	C	2.2	No
Westwinds (U)	SB LR	PM	14.3	B	15.4	C	1.1	No
9) N. River Rd at	NB LR	AM	0.0	A	11.2	B	11.2	No
Riverview Way (U)	SB LR	AM	20.3	C	24.6	C	4.3	No
	NB LR	PM	0.0	A	13.2	B	13.2	No
	SB LR	PM	31.5	D	67.2	**F**	35.7	**Yes**
10) N. River Rd at	All	AM	19.3	B	19.4	C	0.1	No
Calle Montecito (S)	All	PM	19.0	B	20.2	C	1.2	No
11) N. River Rd at	All	AM	9.8	A	9.9	A	0.1	No
Redondo Dr (S)	All	PM	10.4	B	10.6	B	0.2	No
12) N. River Rd at	All	AM	46.4	D	48.9	D	2.5	No
College Blvd (S)	All	PM	51.5	D	61.5	**E**	10.0	**Yes**
13) College Blvd at	All	AM	7.9	A	8.3	A	0.4	No
Buchanon Park (S)	All	PM	8.9	A	9.0	A	0.1	No
14) College Blvd at	All	AM	17.1	B	18.1	B	1.0	No
Adams St (S)	All	PM	16.2	B	16.7	B	0.5	No
15) College Blvd at	All	AM	20.4	C	21.4	C	1.0	No
Via Cupeno (S)	All	PM	28.4	C	29.3	C	0.9	No
16) College Blvd at	All	AM	60.4	**E**	61.7	**E**	1.3	No
SR-76 (S)	All	PM	81.7	**F**	85.8	**F**	4.1	**Yes**
17) N. River Rd at	All	AM	22.7	C	22.7	C	0.0	No
Vandergrift Blvd (S)	All	PM	29.6	C	30.0	C	0.4	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service (Bold = unacceptable LOS). 4) Delta is the increase in delay from project. 5) Impact if project traffic exceeds threshold.

Figure 11: Existing plus Project Volumes

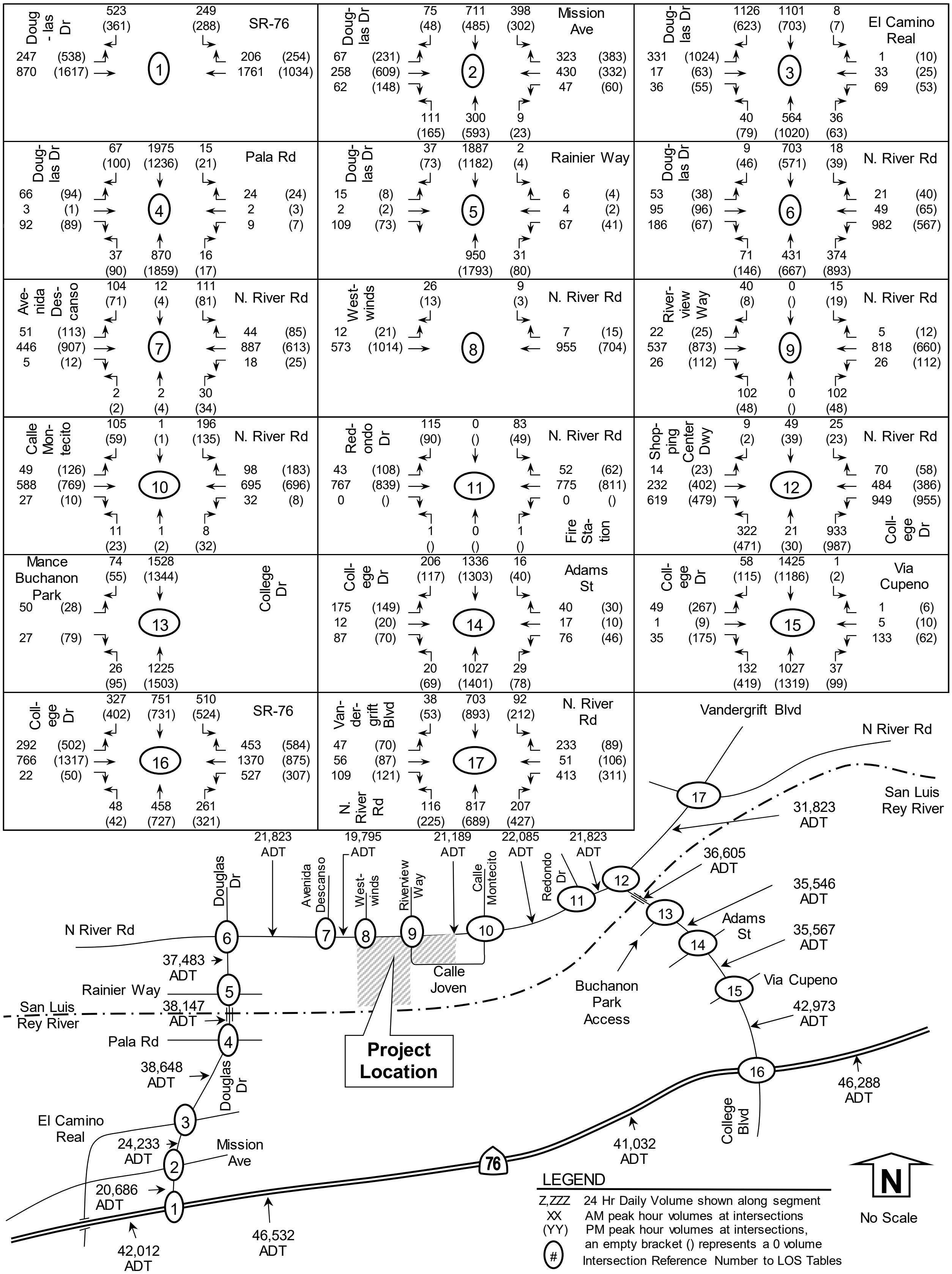


TABLE 10: EXISTING PLUS PROJECT SEGMENT LEVEL OF SERVICE

Segment	Classification (as built)	Existing Daily Volume	Existing LOS E Capacity	Existing V/C	Existing LOS	Project Daily Volume	Existing + Project Daily Volume	Existing + Project LOS E Capacity	Existing + Project V/C	Existing + Project LOS	Change in V/C	Impact ?
Douglas Drive												
1) N. River Rd to Rainier Way	4 Ln Major (4D)	35,915	40,000	0.898	**E**	1,568	37,483	40,000	0.937	**E**	0.039	**Yes**
2) Rainier Way to Pala Rd	4 Ln Major (4U)	36,579	40,000	0.914	**E**	1,568	38,147	40,000	0.954	**E**	0.039	**Yes**
3) Pala Rd to El Camino Real	4 Ln Major (4D)	37,080	40,000	0.927	**E**	1,568	38,648	40,000	0.966	**E**	0.039	**Yes**
4) El Camino Real to Mission Ave	4 Ln Secondary (4U)	23,305	30,000	0.777	D	928	24,233	30,000	0.808	D	0.031	No
5) Mission Ave to SR-76	4 Ln Major (4D)	20,142	40,000	0.504	B	544	20,686	40,000	0.517	B	0.014	No
North River Road												
6) Douglas Dr to Avenida Descanso	4 Ln Major (4D)	20,223	40,000	0.506	B	1,600	21,823	40,000	0.546	C	0.040	No
7) Avenida Descanso to Riverview Way	4 Ln Major (4U)	18,195	40,000	0.455	B	1,600	19,795	40,000	0.495	B	0.040	No
8) Riverview Way to Calle Montecito	4 Ln Major (4D)	19,589	40,000	0.490	B	1,600	21,189	40,000	0.530	C	0.040	No
9) Calle Montecito to Redondo Dr	4 Ln Major (4D)	20,485	40,000	0.512	B	1,600	22,085	40,000	0.552	C	0.040	No
10) Redondo Dr to College Blvd	4 Ln Major (4D)	20,383	40,000	0.510	B	1,440	21,823	40,000	0.546	C	0.036	No
11) College Blvd to Vandergrift Blvd	5 Ln Major (5D)	31,503	45,000	0.700	C	320	31,823	45,000	0.707	C	0.007	No
College Blvd												
12) N. River Rd to Buchanon Park	4 Ln Major (4D)	35,485	40,000	0.887	**E**	1,120	36,605	40,000	0.915	**E**	0.028	**Yes**
13) Buchanon Park to Adams St	4 Ln Major (4U)	34,426	40,000	0.861	D	1,120	35,546	40,000	0.889	**E**	0.028	**Yes**
14) Adams St to Via Cupeno	6 Ln Major (6D)	34,479	50,000	0.690	C	1,088	35,567	50,000	0.711	C	0.022	No
15) Via Cupeno to SR-76	6 Ln Major (6D)	41,981	50,000	0.840	D	992	42,973	50,000	0.859	D	0.020	No
SR-76												
16) Foussat Rd to Douglas Dr	4 Ln Expressway (4D)	41,500	60,000	0.692	C	512	42,012	60,000	0.700	C	0.009	No
17) Douglas Dr to Rancho Del Oro	4 Ln Expressway (4D)	46,500	60,000	0.775	C	32	46,532	60,000	0.776	C	0.001	No
18) Frazee Rd to College Blvd	4 Ln Expressway (4D)	41,000	60,000	0.683	C	32	41,032	60,000	0.684	C	0.001	No
19) College Blvd to N. Santa Fe	4 Ln Expressway (4D)	46,000	60,000	0.767	C	288	46,288	60,000	0.771	C	0.005	No

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Project impact if project traffic exceeds City thresholds. Bold LOS indicates unacceptable LOS.

Under Existing plus Project conditions, the following study intersections and segments were calculated to operate at LOS E/F AND the project has a transportation impact:

1) Intersection #9: N. River Road/Riverview Way
2) Intersection #12: N. River Road/College Blvd
3) Intersection #16: SR-76/College Blvd
4) Segment #1: Douglas Drive from N. River Rd to Rainier Way (LOS E)
5) Segment #2: Douglas Drive from Rainier Way to Pala Rd (LOS E)
6) Segment #3: Douglas Drive from Pala Rd to El Camino Real (LOS E)
7) Segment #12: College Blvd from N. River Rd to Buchanon Park (LOS E)
8) Segment #13: College Blvd from Buchanon Park to Adams St (LOS E)

3.8 Cumulative Projects

City of Oceanside staff provided traffic data for nine cumulative projects for the cumulative analysis at the time of the Notice of Preparation in December 2018. The cumulative project locations are shown on **Figure 12** with cumulative project details included in **Appendix I**. The cumulative project traffic volumes are shown on **Figure 13**. The following list includes a brief description of the cumulative projects:

1) Villa Storia: a residential subdivision with up to 420 homes (62 single family and 358 multi-family) generally located north of Mission Avenue at Academy Road in the City of Oceanside. According to the traffic study prepared by LLG (2013), this cumulative project is calculated to generate 3,284 daily trips with 58 AM inbound, 205 AM outbound, 225 PM inbound, and 97 PM outbound trips.

2) Mission Cove: a mixed-use project with 150 apartments, 138 senior/special needs housing units, 5,000 square feet (sf) of specialty retail, 2,750 sf of office space, 2,750 sf of medical office space, senior/special needs adult day care for up to 60 adults, and a child day care center for 50 children generally located on the south side of Mission Avenue between Airport Road and Foussat Road in the City of Oceanside. According to the traffic study prepared by RBF (2011), this cumulative project is calculated to generate 2,080 net daily trips with 58 AM inbound, 102 AM outbound, 104 PM inbound, and 75 PM outbound trips.

3) Pacific Coast Business Park: a commercial project with 1,100,00 sf of industrial use, 518,000 sf of general office, and 80,500 sf of medical office generally located south of Old Grove Road and west of College Boulevard in the City of Oceanside. According to the traffic study prepared by Kimley-Horn (2009), this cumulative project is calculated to generate 21,597 daily trips with 2,213 AM inbound, 273 AM outbound, 575 PM inbound, and 2,080 PM outbound trips.

4) Rancho Del Oro Village XII: a residential subdivision with up to 303 homes (mix of single and multi-family) generally located on the northwest quadrant of College Boulevard and Old Grove Road in the City of Oceanside. According to the traffic study prepared by RBF (2010), this cumulative project is calculated to generate 2,424 daily trips with 39 AM inbound, 154 AM outbound, 169 PM inbound, and 73 PM outbound trips.

5) Oceanpointe: a residential subdivision with up to 200 multi-family homes generally located south of SR-76 mid-way between Stage Coach Road and San Ramon Drive in the City of Oceanside. According to the traffic study prepared by LOS Engineering, Inc. (2005), this cumulative project is calculated to generate 1,600 daily trips with 26 AM inbound, 102 AM outbound, 112 PM inbound, and 48 PM outbound trips.

6) El Corazon Specific Plan: a mixed-use project with commercial, retail, hotel, residential, and recreation facilities on 465 acres generally bounded by Mesa Drive to the north, Rancho del Oro Drive to the east, Oceanside Boulevard to the south, and El Camino Real to the west in the City of Oceanside. According to the traffic study prepared by LLG, this cumulative project is calculated to generate 15,251 daily trips with 201 AM inbound, 168 AM outbound, 459 PM inbound, and 409 PM outbound trips.

7) Oceanside + Melrose: a mixed-use project with 37 single family homes, 278 multi-family homes, 10,000 sf restaurant space, and 10,000 sf office space. According to the traffic study prepared by LLG (2017), this cumulative project is calculated to generate 4,059 daily trips with 25 AM inbound, 96 AM outbound, 104 PM inbound, and 46 PM outbound trips.

8) Onpoint Oceanside: a commercial center with a gas station including 3,000 sf food mart and car wash, 8,800 sf retail space, 5,000 sf fast food restaurant space, and 2,400 sf high turnover restaurant space generally located on the southwest corner of SR-76 at Foussat Rd. According to the traffic study prepared by Kimley Horn (2018), this cumulative project is calculated to generate 4,434 daily trips with 151 AM inbound, 150 AM outbound, 190 PM inbound, and 187 PM outbound trips.

9) North River Farms: a mixed-use project with up to 689 homes, 25,000 sf commercial space, 5,000 sf restaurant space, 30 acres farm use, and 100 room hotel located on N. River Road east of Stallion Dr (approx. ½ mile east of Vandergraft Blvd). According to the traffic study prepared by LLG (2018), this cumulative project is calculated to generate driveway trips in the amount of 7,921 daily trips with 166 AM inbound, 396 AM outbound, 515 PM inbound, and 262 PM outbound trips. <u>Please note that this cumulative project is included based on the May 2021 Superior Court ruling upholding the project approval and in order to keep the analysis more conservative.</u>

The traffic generated from the proposed cumulative projects is summarized in **Table 11**:

TABLE 11: CUMULATIVE PROJECT TRAFFIC GENERATION

Cumulative Project	ADT	AM IN	AM OUT	PM IN	PM OUT
1) Villa Storia (62 single family and 358 multi-family homes)	3,284	58	205	225	97
2) Mission Cove Mixed Use (150 apts, 138 senior housing homes, 5 KSF specialty retail, 2.75 KSF office, 2.75 KSF medical office, 60 adult senior day care, 50 child day care)	2,080	58	102	104	75
3) Pacific Coast Business Park (1,100 KSF industrial, 518 KSF office, 80.5 KSF medical office)	21,597	2,213	273	575	2,080
4) Rancho Del Oro Village XII (303 multi-family homes)	2,424	39	154	169	73
5) Oceanpointe Development (200 multi-family homes)	1,600	26	102	112	48
6) El Corazon (mixed use master plan phase 1, 2, & Arena)	15,251	201	168	459	409
7) Oceanside + Melrose (37 single family homes, 278 multi-family homes, 10 KSF restaurant, 10 KSF office space)	4,059	25	96	104	46
8) Onpoint Oceanside (a commercial center with a gas station including a 3 KSF food mart and car wash; 8.8 KSF retail; 5 KSF fast food restaurants; and 2.4 KSF high turn over restaruant).	4,434	151	150	190	187
9) North River Farms Mixed Use (689 homes, 25 KSF commercial, 5 KSF restaruant, 30 acres farm use, 100 room hotel)	7,921	166	396	515	262
TOTAL	**62,650**	**2,937**	**1,646**	**2,453**	**3,277**

Notes: SF: Single-Family. MF: Multi-Family. KSF: 1,000 square feet

Figure 12: Cumulative Project Locations

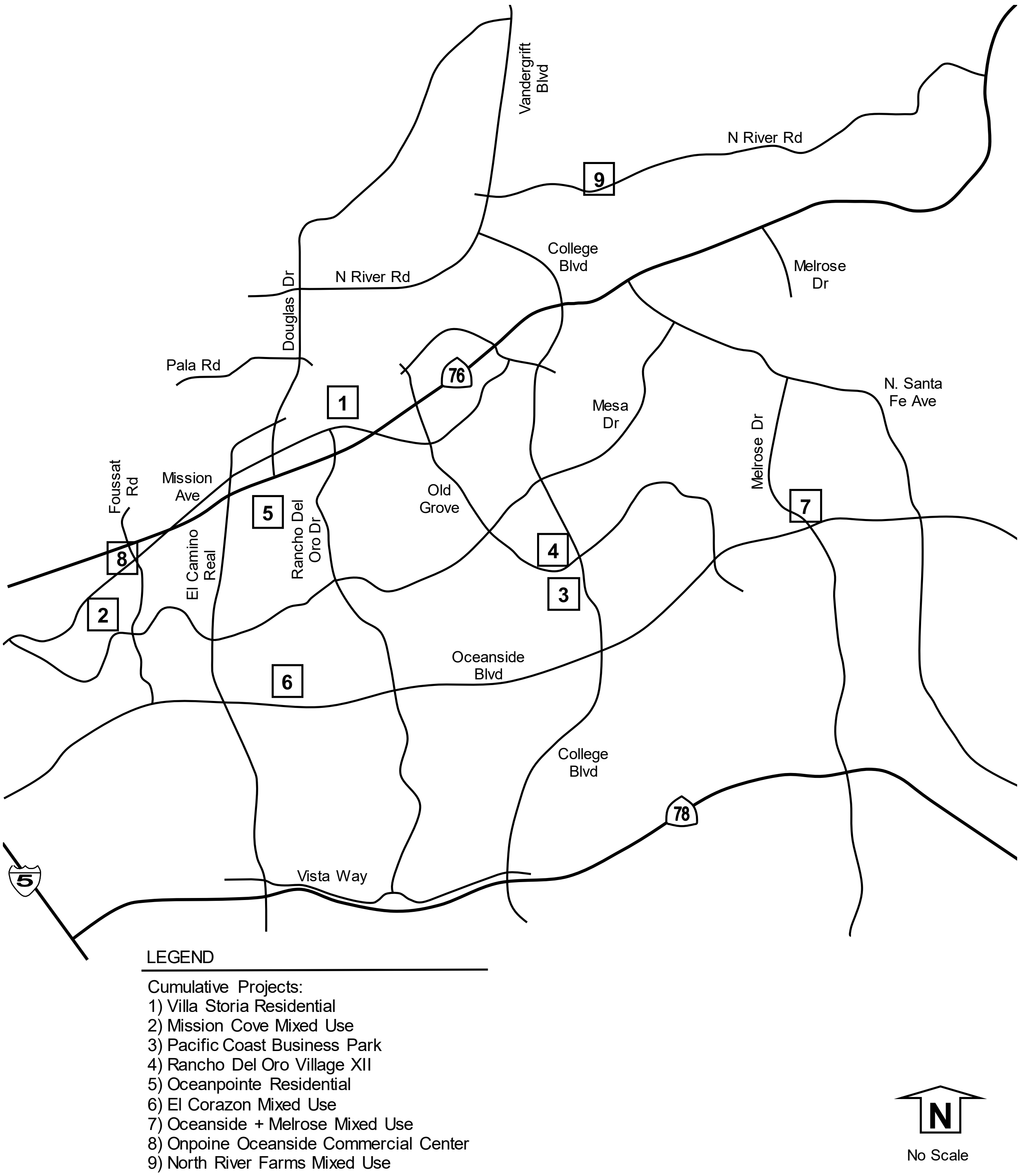
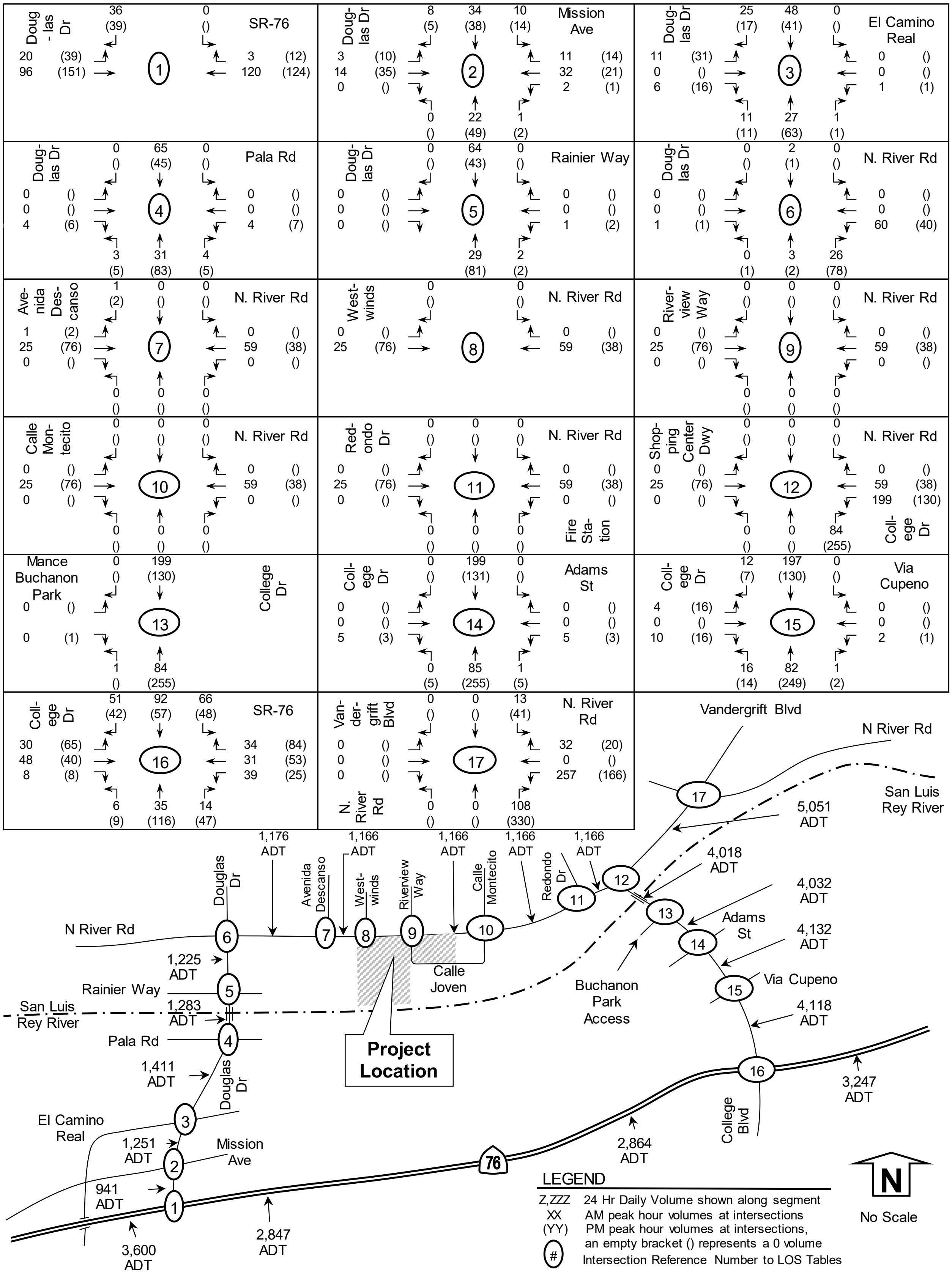


Figure 13: Cumulative Project Volumes



3.9 Near Term (Existing + Cumulative) Conditions

This scenario analyzes the addition of cumulative project traffic onto the existing traffic for AM, PM, and daily traffic conditions. The peak hour intersection volumes and daily traffic volumes for this scenario of near term is shown in **Figure 14**. The intersection LOS calculated with the addition of cumulative traffic is shown in **Table 12**, with segment LOS shown in **Table 13.** Intersection LOS worksheets are included in **Appendix J**.

TABLE 12: NEAR TERM (EXISTING + CUMULATIVE) INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Near Term (Existing + Cumulative) Delay[2]	LOS[3]
1) Douglas Dr at	All	AM	53.1	D
SR-76 (S)	All	PM	27.4	C
2) Douglas Dr at	All	AM	35.5	D
Mission Ave (S)	All	PM	45.8	D
3) Douglas Dr at	All	AM	19.6	B
El Camino Real (S)	All	PM	39.6	D
4) Douglas Dr at	All	AM	32.6	C
Pala Rd (S)	All	PM	24.6	C
5) Douglas Dr at	All	AM	34.1	C
Rainier Way (S)	All	PM	22.9	C
6) Douglas Dr at	All	AM	40.9	D
N. River Rd (S)	All	PM	25.1	C
7) N. River Rd at	All	AM	41.6	D
Avenida Descanso (S)	All	PM	12.2	B
8) N. River Rd at	SB LR	AM	18.3	C
Westwinds (U)	SB LR	PM	15.1	C
9) N. River Rd at	NB LR	AM	0.0	A
Riverview Way (U)	SB LR	AM	22.4	C
	NB LR	PM	0.0	A
	SB LR	PM	36.3	**E**
10) N. River Rd at	All	AM	19.5	B
Calle Montecito (S)	All	PM	19.3	B
11) N. River Rd at	All	AM	9.9	A
Redondo Dr (S)	All	PM	10.4	B
12) N. River Rd at	All	AM	73.7	**E**
College Blvd (S)	All	PM	69.3	**E**
13) College Blvd at	All	AM	9.1	A
Buchanon Park (S)	All	PM	9.4	A
14) College Blvd at	All	AM	21.4	C
Adams St (S)	All	PM	18.4	B
15) College Blvd at	All	AM	25.0	C
Via Cupeno (S)	All	PM	33.0	C
16) College Blvd at	All	AM	69.2	**E**
SR-76 (S)	All	PM	107.0	**F**
17) N. River Rd at	All	AM	29.8	C
Vandergrift Blvd (S)	All	PM	65.5	**E**

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service (Bold LOS = unacceptable LOS).

Figure 14: Near Term (Existing + Cumulative) Volumes

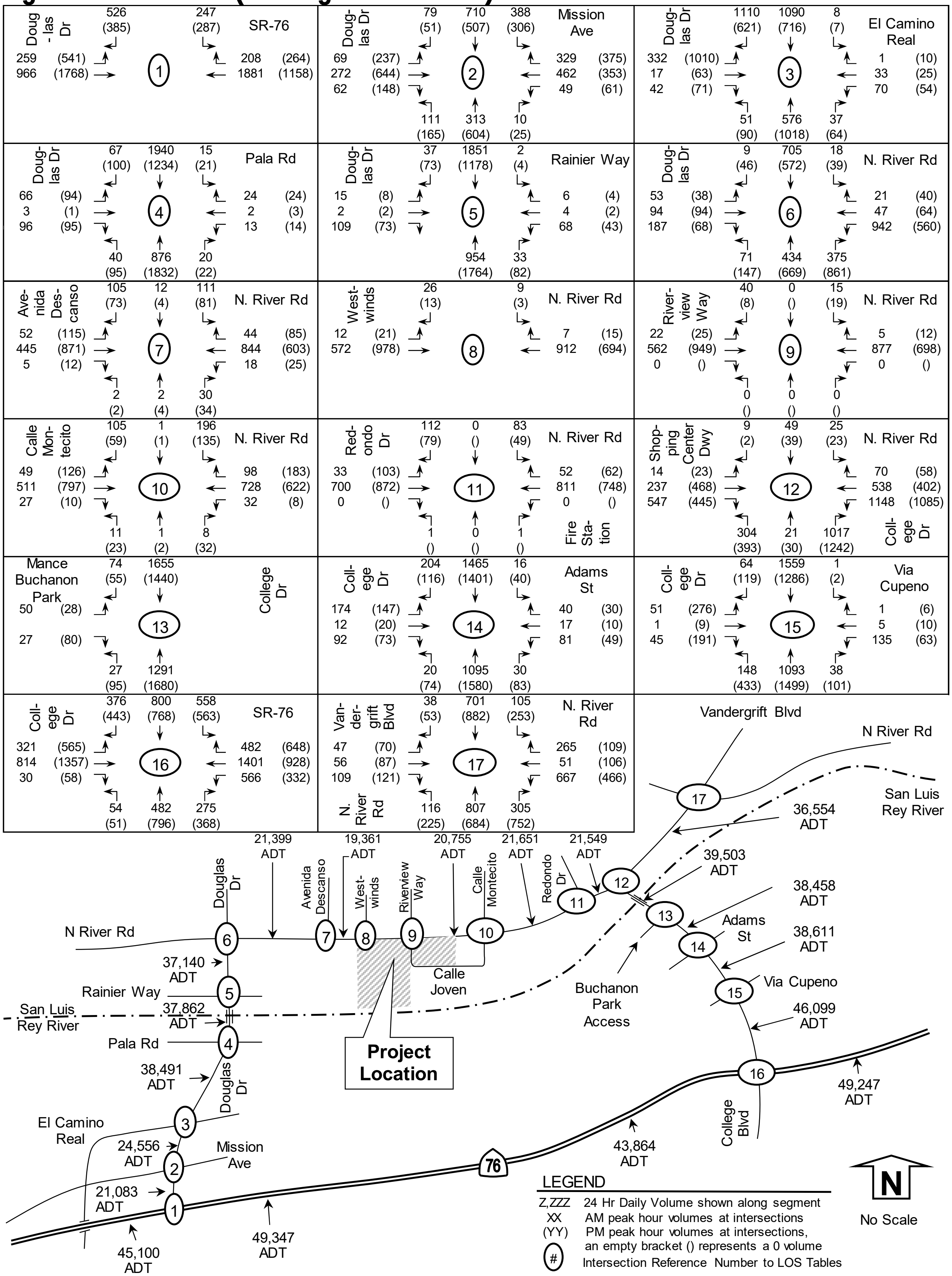


TABLE 13: NEAR TERM (EXISTING + CUMULATIVE) SEGMENT LEVEL OF SERVICE

Segment	Classification (as built)	Near Term (Existing + Cumulative) Daily Volume	LOS E Capacity*	V/C	LOS
Douglas Drive					
1) N. River Rd to Rainier Way	4 Ln Major (4D)	37,140	40,000	0.929	**E**
2) Rainier Way to Pala Rd	4 Ln Major (4U)	37,862	40,000	0.947	**E**
3) Pala Rd to El Camino Real	4 Ln Major (4D)	38,491	40,000	0.962	**E**
4) El Camino Real to Mission Ave	4 Ln Secondary (4U)	24,556	30,000	0.819	D
5) Mission Ave to SR-76	4 Ln Major (4D)	21,083	40,000	0.527	C
North River Road					
6) Douglas Dr to Avenida Descanso	4 Ln Major (4D)	21,399	40,000	0.535	C
7) Avenida Descanso to Riverview Way	4 Ln Major (4U)	19,361	40,000	0.484	B
8) Riverview Way to Calle Montecito	4 Ln Major (4D)	20,755	40,000	0.519	B
9) Calle Montecito to Redondo Dr	4 Ln Major (4D)	21,651	40,000	0.541	C
10) Redondo Dr to College Blvd	4 Ln Major (4D)	21,549	40,000	0.539	C
11) College Blvd to Vandergrift Blvd	5 Ln Major (5D)	36,554	45,000	0.812	D
College Blvd					
12) N. River Rd to Buchanon Park	4 Ln Major (4D)	39,503	40,000	0.988	**E**
13) Buchanon Park to Adams St	4 Ln Major (4U)	38,458	40,000	0.961	**E**
14) Adams St to Via Cupeno	6 Ln Major (6D)	38,611	50,000	0.772	C
15) Via Cupeno to SR-76	6 Ln Major (6D)	46,099	50,000	0.922	**E**
SR-76					
16) Foussat Rd to Douglas Dr	4 Ln Expressway (4D)	45,100	60,000	0.752	C
17) Douglas Dr to Rancho Del Oro	4 Ln Expressway (4D)	49,347	60,000	0.822	C
18) Frazee Rd to College Blvd	4 Ln Expressway (4D)	43,864	60,000	0.731	C
19) College Blvd to N. Santa Fe	4 Ln Expressway (4D)	49,247	60,000	0.821	C

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Bold LOS indicates unaccetpable LOS.

Under Near Term (Existing + Cumulative) conditions, the following study elements were calculated to operate at LOS E/F:

1) Intersection #9: N. River Rd/Riverview Way
2) Intersection #12 N. River Rd/College Blvd
3) Intersection #16: SR-76/College Blvd
4) Intersection #17: N. River Rd/Vandergrift Blvd
5) Segment #1: Douglas Drive from N. River Rd to Rainier Way
6) Segment #2: Douglas Drive from Rainier Way to Pala Rd
7) Segment #3: Douglas Drive from Pala Rd to El Camino Real
8) Segment #12: College Blvd from N. River Rd to Buchanon Park
9) Segment #13: College Blvd from Buchanon Park to Adams St
10) Segment #15 College Blvd from Via Cupeno to SR-76

3.10 Near Term (Existing + Cumulative) plus Project Conditions

This scenario analyzes the addition of Project traffic onto Near Term (Existing + Cumulative) conditions for AM, PM, and daily traffic conditions. The peak hour intersection volumes and daily traffic volumes for this scenario is shown in **Figure 15**. The intersection LOS is shown in **Table 14** with segment LOS shown in **Table 15.** Intersection LOS worksheets are included in **Appendix K**.

TABLE 14: NEAR TERM (EXISTING + CUMULATIVE) PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Near Term Delay[2]	Near Term LOS[3]	Near Term + Project Delay[2]	Near Term + Project LOS[3]	Delta[4]	Impact?[5]
1) Douglas Dr at	All	AM	53.1	D	53.7	D	0.6	No
SR-76 (S)	All	PM	27.4	C	28.7	C	1.3	No
2) Douglas Dr at	All	AM	35.5	D	38.9	D	3.4	No
Mission Ave (S)	All	PM	45.8	D	50.5	D	4.7	No
3) Douglas Dr at	All	AM	19.6	B	20.3	C	0.7	No
El Camino Real (S)	All	PM	39.6	D	46.1	D	6.5	No
4) Douglas Dr at	All	AM	32.6	C	39.8	D	7.2	No
Pala Rd (S)	All	PM	24.6	C	31.0	C	6.4	No
5) Douglas Dr at	All	AM	34.1	C	44.5	D	10.4	No
Rainier Way (S)	All	PM	22.9	C	33.6	C	10.7	No
6) Douglas Dr at	All	AM	40.9	D	44.2	D	3.3	No
N. River Rd (S)	All	PM	25.1	C	25.7	C	0.6	No
7) N. River Rd at	All	AM	41.6	D	44.3	D	2.7	No
Avenida Descanso (S)	All	PM	12.2	B	12.2	B	0.0	No
8) N. River Rd at	SB LR	AM	18.3	C	20.8	C	2.5	No
Westwinds (U)	SB LR	PM	15.1	C	16.3	C	1.2	No
9) N. River Rd at	NB LR	AM	0.0	A	11.4	B	11.4	No
Riverview Way (U)	SB LR	AM	22.4	C	27.8	D	5.4	No
	NB LR	PM	0.0	A	13.8	B	13.8	No
	SB LR	PM	36.3	**E**	84.2	**F**	47.9	**Yes**
10) N. River Rd at	All	AM	19.5	B	19.8	B	0.3	No
Calle Montecito (S)	All	PM	19.3	B	20.8	C	1.5	No
11) N. River Rd at	All	AM	9.9	A	10.0	A	0.1	No
Redondo Dr (S)	All	PM	10.4	B	10.6	B	0.2	No
12) N. River Rd at	All	AM	73.7	**E**	75.2	**E**	1.5	No
College Blvd (S)	All	PM	69.3	**E**	78.0	**E**	8.7	**Yes**
13) College Blvd at	All	AM	9.1	A	9.8	A	0.7	No
Buchanon Park (S)	All	PM	9.4	A	9.6	A	0.2	No
14) College Blvd at	All	AM	21.4	C	24.4	C	3.0	No
Adams St (S)	All	PM	18.4	B	19.1	B	0.7	No
15) College Blvd at	All	AM	25.0	C	27.7	C	2.7	No
Via Cupeno (S)	All	PM	33.0	C	34.8	C	1.8	No
16) College Blvd at	All	AM	69.2	**E**	71.0	**E**	1.8	No
SR-76 (S)	All	PM	107.0	**F**	112.7	**F**	5.7	**Yes**
17) N. River Rd at	All	AM	29.8	C	30.0	C	0.2	No
Vandergrift Blvd (S)	All	PM	65.5	**E**	66.9	**E**	1.4	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service (Bold = unacceptable LOS). 4) Delta is the increase in delay from project. 5) Impact if project traffic exceeds threshold.

Figure 15: Near Term (Existing + Cumulative) plus Project Volumes

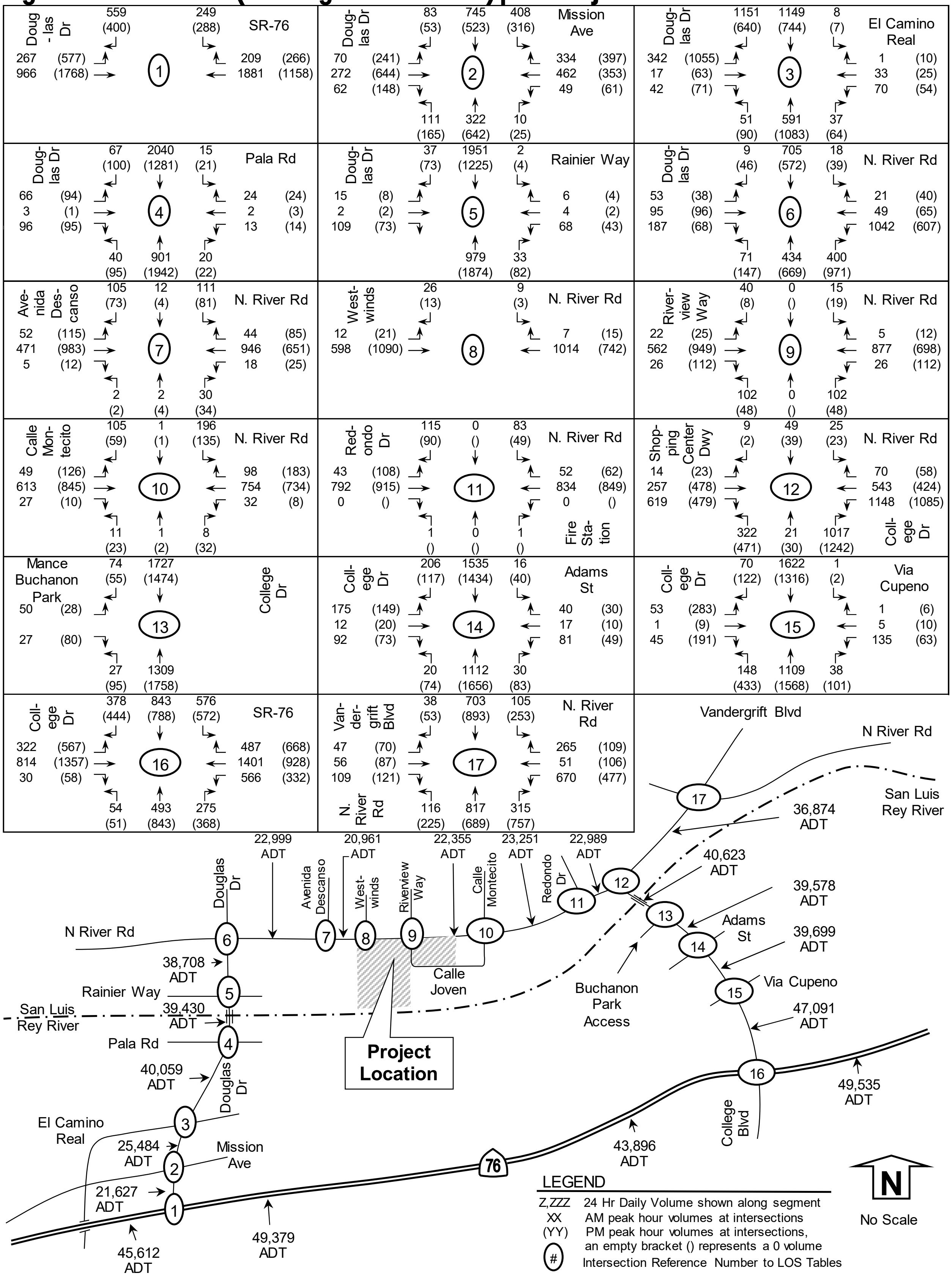


TABLE 15: NEAR TERM (EXISTING + CUMULATIVE) PLUS PROJECT SEGMENT LEVEL OF SERVICE

Segment	Classification (as built)	Near Term				Project	Near Term + Project					
		Daily Volume	LOS E Capacity	V/C	LOS	Daily Volumes	Daily Volume	LOS E Capacity	V/C	LOS	Change in V/C	Impact ?
Douglas Drive												
1) N. River Rd to Rainier Way	4 Ln Major (4D)	37,140	40,000	0.929	**E**	1,568	38,708	40,000	0.968	**E**	0.039	**Yes**
2) Rainier Way to Pala Rd	4 Ln Major (4U)	37,862	40,000	0.947	**E**	1,568	39,430	40,000	0.986	**E**	0.039	**Yes**
3) Pala Rd to El Camino Real	4 Ln Major (4D)	38,491	40,000	0.962	**E**	1,568	40,059	40,000	1.001	**F**	0.039	**Yes**
4) El Camino Real to Mission Ave	4 Ln Secondary (4U)	24,556	30,000	0.819	D	928	25,484	30,000	0.849	**E**	0.031	**Yes**
5) Mission Ave to SR-76	4 Ln Major (4D)	21,083	40,000	0.527	C	544	21,627	40,000	0.541	C	0.014	No
North River Road												
6) Douglas Dr to Avenida Descanso	4 Ln Major (4D)	21,399	40,000	0.535	C	1,600	22,999	40,000	0.575	C	0.040	No
7) Avenida Descanso to Riverview W	4 Ln Major (4U)	19,361	40,000	0.484	B	1,600	20,961	40,000	0.524	B	0.040	No
8) Riverview Way to Calle Montecito	4 Ln Major (4D)	20,755	40,000	0.519	B	1,600	22,355	40,000	0.559	C	0.040	No
9) Calle Montecito to Redondo Dr	4 Ln Major (4D)	21,651	40,000	0.541	C	1,600	23,251	40,000	0.581	C	0.040	No
10) Redondo Dr to College Blvd	4 Ln Major (4D)	21,549	40,000	0.539	C	1,440	22,989	40,000	0.575	C	0.036	No
11) College Blvd to Vandergrift Blvd	5 Ln Major (5D)	36,554	45,000	0.812	D	320	36,874	45,000	0.819	D	0.007	No
College Blvd												
12) N. River Rd to Buchanon Park	4 Ln Major (4D)	39,503	40,000	0.988	**E**	1,120	40,623	40,000	1.016	**F**	0.028	**Yes**
13) Buchanon Park to Adams St	4 Ln Major (4U)	38,458	40,000	0.961	**E**	1,120	39,578	40,000	0.989	**E**	0.028	**Yes**
14) Adams St to Via Cupeno	6 Ln Major (6D)	38,611	50,000	0.772	C	1,088	39,699	50,000	0.794	C	0.022	No
15) Via Cupeno to SR-76	6 Ln Major (6D)	46,099	50,000	0.922	**E**	992	47,091	50,000	0.942	**E**	0.020	No
SR-76												
16) Foussat Rd to Douglas Dr	4 Ln Expressway (4D)	45,100	60,000	0.752	C	512	45,612	60,000	0.760	C	0.009	No
17) Douglas Dr to Rancho Del Oro	4 Ln Expressway (4D)	49,347	60,000	0.822	C	32	49,379	60,000	0.823	C	0.001	No
18) Frazee Rd to College Blvd	4 Ln Expressway (4D)	43,864	60,000	0.731	C	32	43,896	60,000	0.732	C	0.001	No
19) College Blvd to N. Santa Fe	4 Ln Expressway (4D)	49,247	60,000	0.821	C	288	49,535	60,000	0.826	C	0.005	No

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Significant impact if LOS D goes to E/F with project traffic. Project impact if project traffic exceeds thresholds under LOS E/F. Bold LOS indicates unacceptable LOS.

Under Near Term (Existing + Cumulative) plus Project conditions, the following study locations were calculated to operate at LOS E/F AND the project has a transportation impact:

1) Intersection #9: N. River Rd/Riverview Way
2) Intersection #12: N. River Rd/College Blvd
3) Intersection #16: SR-76/College Blvd
4) Segment #1: Douglas Drive from N. River Rd to Rainier Way
5) Segment #2: Douglas Drive from Rainier Way to Pala Rd
6) Segment #3: Douglas Drive from Pala Rd to El Camino Real
7) Segment #4: Douglas Drive from El Camino Real to Mission Ave
8) Segment #12: College Blvd from N. River Rd to Buchanon Park
9) Segment #13: College Blvd from Buchanon Park to Adams St

The following roadways were calculated to operate at LOS E/F without a transportation impact because the project traffic did not exceed the transportation impact thresholds:

10) Intersection #17: N. River Rd/Vandergrift Blvd
11) Segment #15: College Blvd from Via Cupeno to SR-76

3.11 Horizon Year 2035 Conditions

At the request of City staff, two horizon year 2035 scenarios were analyzed: A Base Master Transportation Plan (MTP) scenario and an Alternative scenario.

The Horizon Year 2035 Base MTP scenario reflects the proposed City of Oceanside Circulation Element Master Transportation Plan network conditions (i.e. future planned roadway improvements that include the Pala Road extension, Melrose extension, various segments expanded to 6 lanes, and Rancho Del Oro interchange) with the exception of SR-76 from I-5 to the eastern City Limits that would remain a 4-lane expressway due lack of funding according to City staff as relayed to them by Caltrans staff.

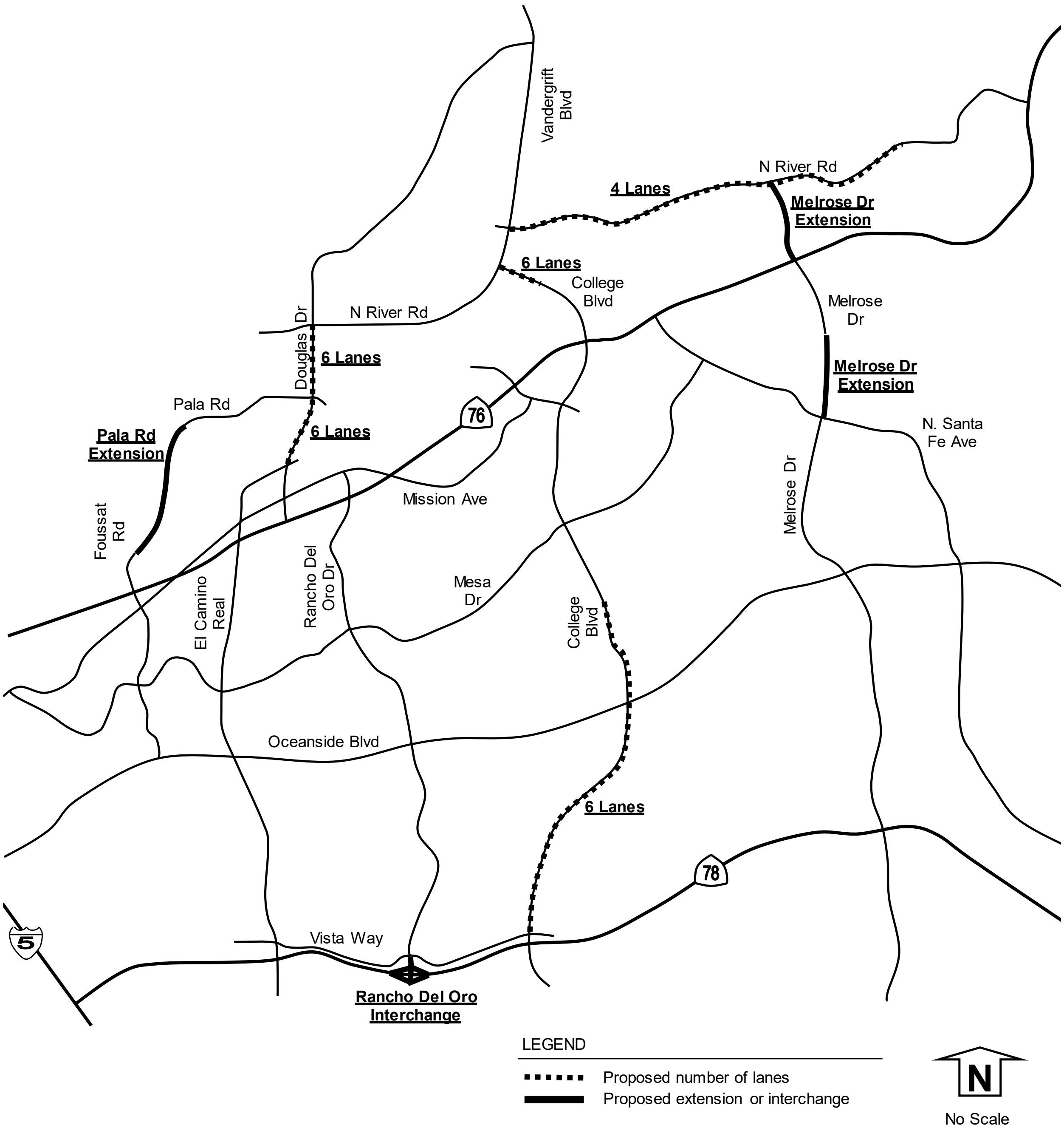
The Horizon Year 2035 Alternative scenario reflects the current roadway network (i.e. it does not incorporate any proposed new roadways nor expanded roadways and is the same as the existing roadway network).

The network differences by scenario are shown in **Table 16**. The proposed Base MTP changes over existing conditions is shown in **Figure 16**.

TABLE 16: SANDAG MODEL NETWORK DETAILS BY SCENARIO

Roadway Element	2035 Base MTP Network	2035 Alternative Network
1) SR-76 (I-5 to eastern City Limit)	4 Lanes	4 Lanes
2) Douglas Drive (N. River Rd to El Camino Real)	6 Lanes	4 Lanes
3) College Ave over San Louis Rey River	6 Lanes	4 Lanes
4) College Ave (Old Grove to Vista Way)	6 Lanes	4 Lanes
5) N. River Rd (Vandergrift to easterly City limit)	4 Lanes	2 Lanes
6) Pala Rd connection between Foussat Rd and Los Arbolitos Blvd	IN	OUT
7) Melrose connection between N. River Rd and SR-76	IN	OUT
8) Melrose connection between Spur Ave and N. Santa Fe	IN	OUT
9) Rancho Del Oro future interchange at SR-76	IN	OUT
Applicable Scenario:	2035 Base MTP	Near-Term & 2035 ALT

Figure 16: Horizon Year 2035 Base MTP Roadway Changes over Existing Conditions



3.12 Horizon Year 2035 Base MTP Conditions

This section documents the analysis of traffic volumes for AM, PM, and daily traffic conditions for a Horizon Year Base 2035 Master Transportation Plan scenario. A SANDAG Series 12 Select Zone Assignment (SZA) was commissioned for the year 2035 Base MTP scenario with the aforementioned network changes over existing conditions (copy included in **Appendix L**). The SANDAG SZA included the project with 400 homes; therefore, this without project scenario has the project volumes subtracted from the SANDAG output volumes.

The Base MTP 2035 segment volumes from the SANDAG Select Zone Assignment were post processed to smooth out the segment volumes and to be at or above the horizon year *Oceanside General Plan Circulation Element* volumes. Calculations are included in **Appendix M**.

The Base MTP 2035 intersection volumes were forecasted using a growth factor calculated from existing and year 2035 segment volumes. Three growth factors were calculated based on the average along each roadway segment. For example, Douglas Drive had a range of volume increases from 6.4% to 22.5% for an average of 15.3% over existing conditions; therefore, the average of 15.3% was applied to the study intersections along Douglas Drive. Calculations are included in **Appendix N**. The growth factors for future intersection volumes are shown below.

1) Douglas Dr/SR-76 (15.3% growth)
2) Douglas Dr/Mission Avenue (15.3% growth)
3) Douglas Dr/El Camino Real (15.3% growth)
4) Douglas Dr/Pala Road (15.3% growth)
5) Douglas Dr/Rainier Way (15.3% growth)
6) N. River Road/Douglas Drive (15.3% growth)
7) N. River Road/Avenida Descanso (23.9% growth)
8) N. River Road/Westwinds Mobile Home Park (23.9% growth)
9) N. River Road/Riverview Way (23.9% growth)
10) N. River Road/Calle Montecito (23.9% growth)
11) N. River Road/Redondo Drive (23.9% growth)
12) N. River Road/College Blvd (16.8% growth)
13) College Blvd/Buchanon Park (16.8% growth)
14) College Blvd/Adams St (16.8% growth)
15) College Blvd/Via Cupeno (16.8% growth)
16) College Blvd/SR-76 (16.8% growth)
17) N. River Road/Vandergrift Blvd (23.9% growth)

The peak hour intersection volumes and daily traffic volumes are shown in **Figure 17**. The Base MTP analysis incorporated the network changes for the segment ADT operations but did not incorporate any intersection improvements identified as part of the MTP for the intersection LOS analysis. The intersection LOS calculated is shown in **Table 17** with segment LOS shown in **Table 18.** Intersection LOS worksheets are included in **Appendix O**.

Figure 17: Horizon Year 2035 MTP Volumes

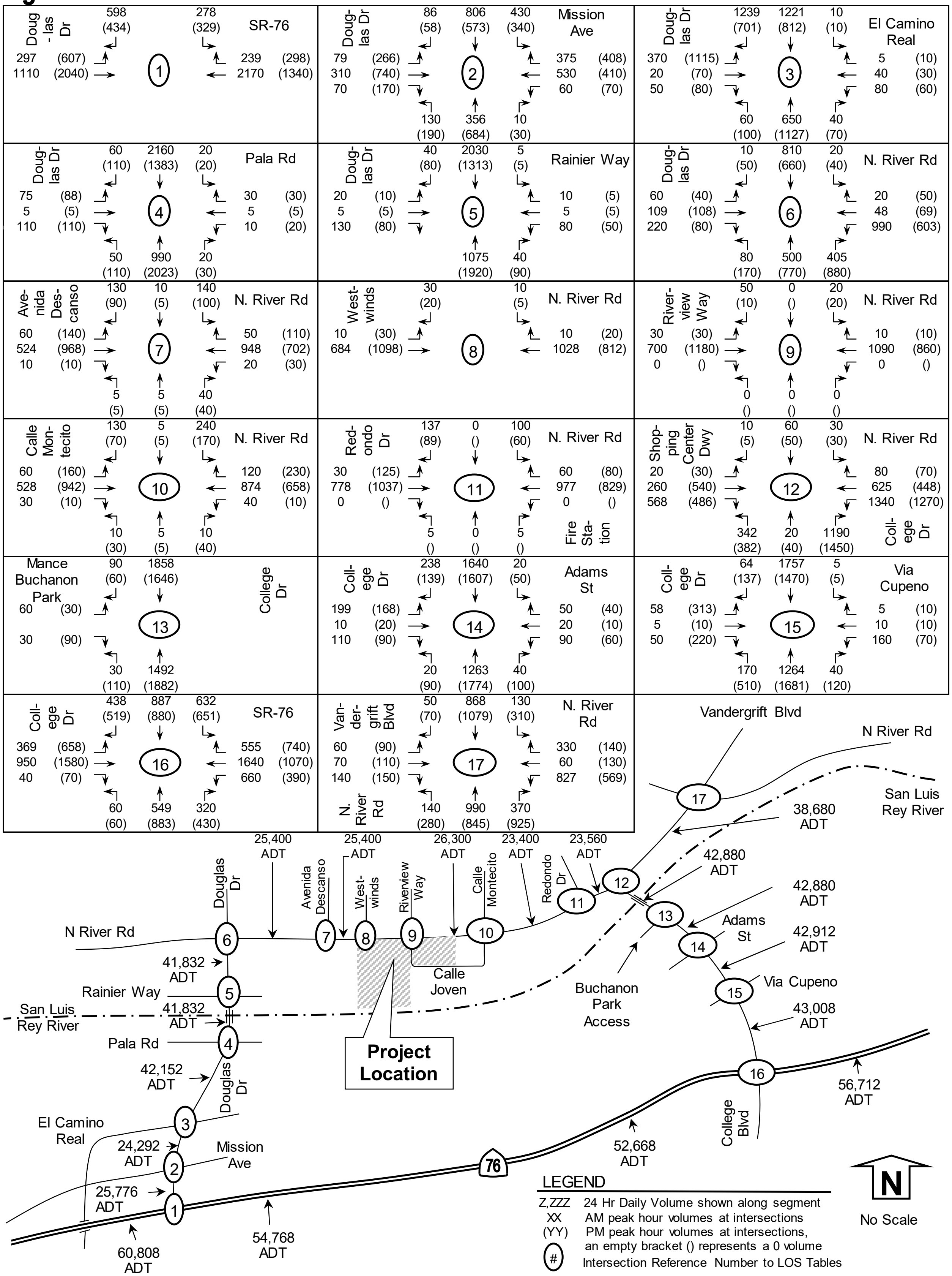


TABLE 17: HORIZON YEAR 2035 BASE MTP INTERSECTION LOS

Intersection and (Analysis)[1]	Movement	Study Period	Horizon Year 2035 MTP Delay[2]	Horizon Year 2035 MTP LOS[3]
1) Douglas Dr at	All	AM	75.2	**E**
SR-76 (S)	All	PM	43.3	D
2) Douglas Dr at	All	AM	44.8	D
Mission Ave (S)	All	PM	60.6	**E**
3) Douglas Dr at	All	AM	23.2	C
El Camino Real (S)	All	PM	44.2	D
4) Douglas Dr at	All	AM	37.7	D
Pala Rd (S)	All	PM	34.7	C
5) Douglas Dr at	All	AM	35.9	D
Rainier Way (S)	All	PM	26.2	C
6) Douglas Dr at	All	AM	47.0	D
N. River Rd (S)	All	PM	28.0	C
7) N. River Rd at	All	AM	19.5	B
Avenida Descanso (S)	All	PM	36.4	D
8) N. River Rd at	SB LR	AM	22.0	C
Westwinds (U)	SB LR	PM	18.9	C
9) N. River Rd at	NB LR	AM	0.0	A
Riverview Way (U)	SB LR	AM	45.1	**E**
	NB LR	PM	0.0	A
	SB LR	PM	67.2	**F**
10) N. River Rd at	All	AM	24.1	C
Calle Montecito (S)	All	PM	24.0	C
11) N. River Rd at	All	AM	10.5	B
Redondo Dr (S)	All	PM	10.7	B
12) N. River Rd at	All	AM	72.0	**E**
College Blvd (S)	All	PM	82.6	**F**
13) College Blvd at	All	AM	12.6	B
Buchanon Park (S)	All	PM	11.0	B
14) College Blvd at	All	AM	27.6	C
Adams St (S)	All	PM	27.7	C
15) College Blvd at	All	AM	22.3	C
Via Cupeno (S)	All	PM	41.5	D
16) College Blvd at	All	AM	97.9	**F**
SR-76 (S)	All	PM	165.8	**F**
17) N. River Rd at	All	AM	56.7	**E**
Vandergrift Blvd (S)	All	PM	109.1	**F**

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. Bold indicated unacceptable LOS.

TABLE 18: HORIZON YEAR 2035 BASE MTP SEGMENT VOLUMES AND LOS

Segment	Circulation Element Classification (Master Transportation Plan)	Horizon Year 2035 Base MTP			
		Daily Volume	LOS E Capacity	V/C	LOS
Douglas Drive					
1) N. River Rd to Rainier Way	6 Lane Major	41,832	50,000	0.84	D
2) Rainier Way to Pala Rd	6 Lane Major	41,832	50,000	0.84	D
3) Pala Rd to El Camino Real	6 Lane Major	42,152	50,000	0.84	D
4) El Camino Real to Mission Ave	4 Lane Major	24,292	40,000	0.61	C
5) Mission Ave to SR-76	4 Lane Major	25,776	40,000	0.64	C
North River Road					
6) Douglas Dr to Avenida Descanso	4 Lane Major	25,400	40,000	0.64	C
7) Avenida Descanso to Riverview Way	4 Lane Major	25,400	40,000	0.64	C
8) Riverview Way to Calle Montecito	4 Lane Major	26,300	40,000	0.66	C
9) Calle Montecito to Redondo Dr	4 Lane Major	23,400	40,000	0.59	C
10) Redondo Dr to College Blvd	4 Lane Major	23,560	40,000	0.59	C
11) College Blvd to Vandergrift Blvd	5 Lane Major	38,680	45,000	0.86	D
College Blvd					
12) N. River Rd to Buchanon Park	6 Lane Major	42,880	50,000	0.86	D
13) Buchanon Park to Adams St	6 Lane Major	42,880	50,000	0.86	D
14) Adams St to Via Cupeno	6 Lane Major	42,912	50,000	0.86	D
15) Via Cupeno to SR-76	6 Lane Major	43,008	50,000	0.86	D
SR-76					
16) Foussat Rd to Douglas Dr	4 Lane Expressway	60,808	60,000	1.01	**F**
17) Douglas Dr to Rancho Del Oro	4 Lane Expressway	54,768	60,000	0.91	D
18) Frazee Rd to College Blvd	4 Lane Expressway	52,668	60,000	0.88	D
19) College Blvd to N. Santa Fe	4 Lane Expressway	56,712	60,000	0.95	**E**

Notes: Daily volume is a 24 hour volume. LOS: Level of Service (bold indicates unacceptable LOS). V/C: Volume to Capacity Ratio.

Under Horizon Year 2035 Base MTP conditions, the following study locations were calculated to operate at LOS E/F:

1) Intersection #1: Douglas Dr/SR-76
2) Intersection #2: Douglas Dr/Mission Ave
3) Intersection #9: N. River Rd/Riverview Wy
4) Intersection #12: N. River Rd/College Blvd
5) Intersection #16: SR-76/College Blvd
6) Intersection #17: N. River Rd/Vandergrift Blvd
7) Segment #16: SR-76 from Foussat Rd to Douglas Dr
8) Segment #19: SR-76 from College Blvd to N. Santa Fe

3.13 Horizon Year 2035 Base MTP plus Project Conditions

This scenario documents the addition of project traffic onto Horizon Year 2035 Base MTP conditions for AM, PM and daily traffic conditions. The project distribution under Base MTP conditions is slightly different than the near-term scenarios because the MTP has additional roadway connections. The MTP distribution is shown in **Figure 18** with the project assignment shown in **Figure 19.** The peak hour intersection volumes and daily traffic volumes for the Base MTP plus Project scenario is shown in **Figure 20**. The intersection LOS is shown in **Table 19** with segment LOS shown in **Table 20.** Intersection LOS worksheets are included in **Appendix P**.

TABLE 19: HORIZON YEAR 2035 BASE MTP PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Horizon Year MTP Delay[2]	Horizon Year MTP LOS[3]	Horizon Year 2035 MTP + Project Delay[2]	LOS[3]	Delta[4]	Impact?[5]
1) Douglas Dr at	All	AM	75.2	**E**	75.6	**E**	0.4	No
SR-76 (S)	All	PM	43.3	D	44.0	D	0.7	No
2) Douglas Dr at	All	AM	44.8	D	47.0	D	2.2	No
Mission Ave (S)	All	PM	60.6	**E**	65.4	**E**	4.8	**Yes**
3) Douglas Dr at	All	AM	23.2	C	24.1	C	0.9	No
El Camino Real (S)	All	PM	44.2	D	49.2	D	5.0	No
4) Douglas Dr at	All	AM	37.7	D	45.5	D	7.8	No
Pala Rd (S)	All	PM	34.7	C	44.5	D	9.8	No
5) Douglas Dr at	All	AM	35.9	D	42.8	D	6.9	No
Rainier Way (S)	All	PM	26.2	C	34.3	C	8.1	No
6) Douglas Dr at	All	AM	47.0	D	52.2	D	5.2	No
N. River Rd (S)	All	PM	28.0	C	28.9	C	0.9	No
7) N. River Rd at	All	AM	19.5	B	20.0	B	0.5	No
Avenida Descanso (S)	All	PM	36.4	D	38.3	D	1.9	No
8) N. River Rd at	SB LR	AM	22.0	C	25.4	D	3.4	No
Westwinds (U)	SB LR	PM	18.9	C	20.7	C	1.8	No
9) N. River Rd at	NB LR	AM	0.0	A	438.8	**F**	438.8	**Yes**
Riverview Way (U)	SB LR	AM	45.1	**E**	67.8	**F**	22.7	**Yes**
	NB LR	PM	0.0	A	943.4	**F**	943.4	**Yes**
	SB LR	PM	67.2	**F**	220.6	**F**	153.4	**Yes**
10) N. River Rd at	All	AM	24.1	C	24.5	C	0.4	No
Calle Montecito (S)	All	PM	24.0	C	26.6	C	2.6	No
11) N. River Rd at	All	AM	10.5	B	10.7	B	0.2	No
Redondo Dr (S)	All	PM	10.7	B	10.9	B	0.2	No
12) N. River Rd at	All	AM	72.0	**E**	76.3	**E**	4.3	**Yes**
College Blvd (S)	All	PM	82.6	**F**	90.8	**F**	8.2	**Yes**
13) College Blvd at	All	AM	12.6	B	14.9	B	2.3	No
Buchanon Park (S)	All	PM	11.0	B	11.4	B	0.4	No
14) College Blvd at	All	AM	27.6	C	30.7	C	3.1	No
Adams St (S)	All	PM	27.7	C	29.3	C	1.6	No
15) College Blvd at	All	AM	22.3	C	22.8	C	0.5	No
Via Cupeno (S)	All	PM	41.5	D	43.0	D	1.5	No
16) College Blvd at	All	AM	97.9	**F**	99.4	**F**	1.5	No
SR-76 (S)	All	PM	165.8	**F**	171.2	**F**	5.4	**Yes**
17) N. River Rd at	All	AM	56.7	**E**	57.1	**E**	0.4	No
Vandergrift Blvd (S)	All	PM	109.1	**F**	110.0	**F**	0.9	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service (Bold = unacceptable LOS). 4) Delta is the increase in delay from project. 5) Impact if project traffic exceeds threshold.

Figure 18: Horizon Year 2035 Base MTP Project Distribution

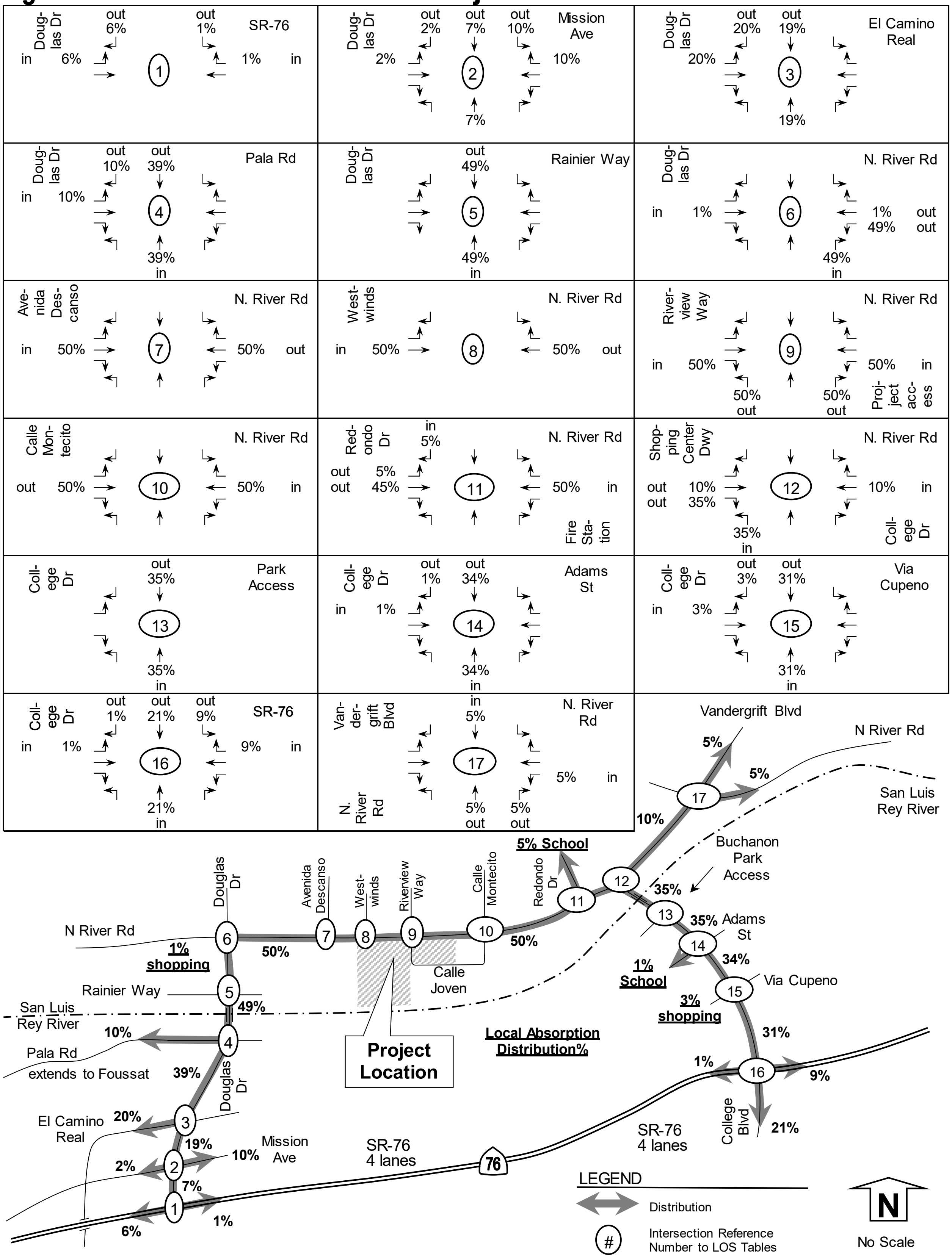


Figure 19: Horizon Year 2035 Base MTP Project Assignment

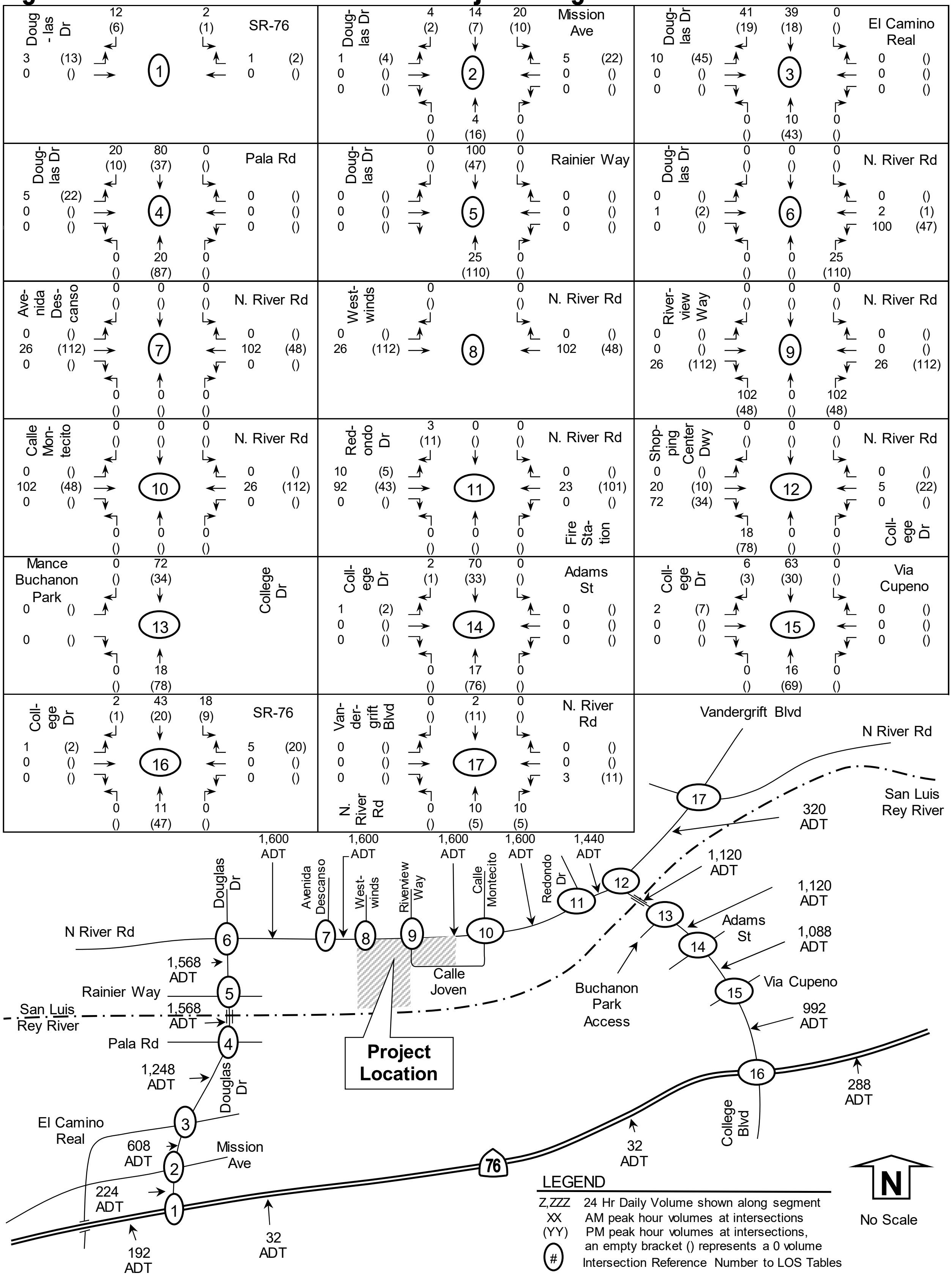


Figure 20: Horizon Year 2035 Base MTP plus Project Volumes

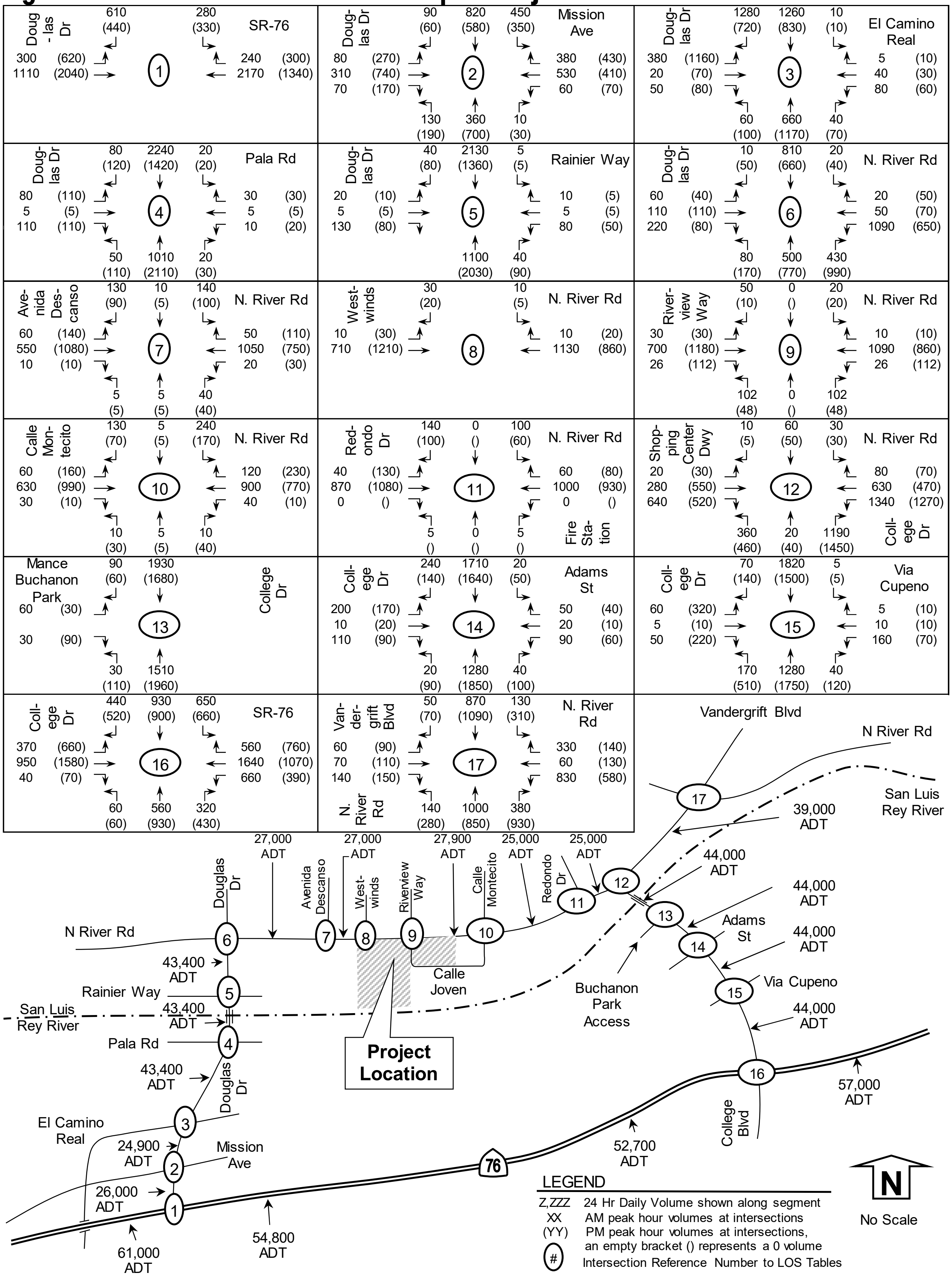


TABLE 20: HORIZON YEAR 2035 BASE MTP PLUS PROJECT SEGMENT LEVEL OF SERVICE

Segment	Circ. Element Classification (MTP)	Horizon Year 2035 Base MTP Daily Volume	LOS E Capacity	V/C	LOS	Project Daily Volumes	Horizon Year 2035 Base MTP + Project Daily Volume	LOS E Capacity	V/C	LOS	V/C Inc.	Impact ?
Douglas Drive												
1) N. River Rd to Rainier Way	6 Lane Major	41,832	50,000	0.837	D	1,568	43,400	50,000	0.868	D	0.031	No
2) Rainier Way to Pala Rd	6 Lane Major	41,832	50,000	0.837	D	1,568	43,400	50,000	0.868	D	0.031	No
3) Pala Rd to El Camino Real	6 Lane Major	42,152	50,000	0.843	D	1,248	43,400	50,000	0.868	D	0.025	No
4) El Camino Real to Mission Ave	4 Lane Major	24,292	40,000	0.607	C	608	24,900	40,000	0.623	C	0.015	No
5) Mission Ave to SR-76	4 Lane Major	25,776	40,000	0.644	C	224	26,000	40,000	0.650	C	0.006	No
North River Road												
6) Douglas Dr to Avenida Descanso	4 Lane Major	25,400	40,000	0.635	C	1,600	27,000	40,000	0.675	C	0.040	No
7) Avenida Descanso to Riverview W	4 Lane Major	25,400	40,000	0.635	C	1,600	27,000	40,000	0.675	C	0.040	No
8) Riverview Way to Calle Montecito	4 Lane Major	26,300	40,000	0.658	C	1,600	27,900	40,000	0.698	C	0.040	No
9) Calle Montecito to Redondo Dr	4 Lane Major	23,400	40,000	0.585	C	1,600	25,000	40,000	0.625	C	0.040	No
10) Redondo Dr to College Blvd	4 Lane Major	23,560	40,000	0.589	C	1,440	25,000	40,000	0.625	C	0.036	No
11) College Blvd to Vandergrift Blvd	5 Lane Major	38,680	45,000	0.860	D	320	39,000	45,000	0.867	D	0.007	No
College Blvd												
12) N. River Rd to Buchanon Park	6 Lane Major	42,880	50,000	0.858	D	1,120	44,000	50,000	0.880	D	0.022	No
13) Buchanon Park to Adams St	6 Lane Major	42,880	50,000	0.858	D	1,120	44,000	50,000	0.880	D	0.022	No
14) Adams St to Via Cupeno	6 Lane Major	42,912	50,000	0.858	D	1,088	44,000	50,000	0.880	D	0.022	No
15) Via Cupeno to SR-76	6 Lane Major	43,008	50,000	0.860	D	992	44,000	50,000	0.880	D	0.020	No
SR-76												
16) Foussat Rd to Douglas Dr	4 Lane Expy.	60,808	60,000	1.013	**F**	192	61,000	60,000	1.017	**F**	0.003	No
17) Douglas Dr to Rancho Del Oro	4 Lane Expy.	54,768	60,000	0.913	D	32	54,800	60,000	0.913	D	0.001	No
18) Frazee Rd to College Blvd	4 Lane Expy.	52,668	60,000	0.878	D	32	52,700	60,000	0.878	D	0.001	No
19) College Blvd to N. Santa Fe	4 Lane Expy.	56,712	60,000	0.945	**E**	288	57,000	60,000	0.950	**E**	0.005	No

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Impact if project traffic exceed City's threshold. MTP: Master Transportation Plan. Bold LOS indicates unacceptable LOS. Expy: Expressway.

Under Horizon Year 2035 Base MTP plus Project conditions, the following study locations were calculated to operate at LOS E/F AND the project has a transportation impact:

1) Intersection #2: Douglas Dr/Mission Ave
2) Intersection #9: N. River Rd/Riverview Way
3) Intersection #12: N. River Rd/College Blvd
4) Intersection #16: College Blvd/SR-76

The following locations were calculated to operate at LOS E/F without a transportation impact because the project traffic did not exceed the significance thresholds:

5) Intersection #1: Douglas Dr/SR-76
6) Intersection #17: N. River Rd/Vandergrift Blvd
7) Segment #16: SR-76 from Foussat Rd to Douglas Dr
8) Segment #19: SR-76 from College Blvd to N. Santa Fe

3.14 Horizon Year 2035 Alternative Conditions

This section documents the analysis of traffic volumes for AM, PM, and daily traffic conditions for a Horizon Year 2035 Alternative scenario. A SANDAG Series 12 Select Zone Assignment (SZA) was commissioned for the year 2035 Alternative scenario (copy included in Appendix G). The SANDAG Select Zone Assignment included the project with 400 homes; therefore, this Alternative without project scenario has the project volumes subtracted from the SANDAG output.

The Alternative 2035 segment volumes were obtained from a SANDAG Select Zone Assignment with post processed to smooth out the segment volumes and to be at or above the horizon year *Oceanside General Plan Circulation Element* volumes. Calculations are included in **Appendix Q**.

The Alternative 2035 intersection volumes were forecasted using a growth factor calculated from existing and year 2035 segment volumes. Three growth factors were calculated based on the average along each roadway segment. For example, Douglas Drive had a range of volume increases from 10.4% to 24.3% for an average of 17.1% over existing conditions; therefore, the average of 17.1% was applied to the study intersections along Douglas Drive. Calculations are included in Appendix L. The growth factors for future intersection volumes are shown below.

1) Douglas Dr/SR-76 (17.1% growth)
2) Douglas Dr/Mission Avenue (17.1% growth)
3) Douglas Dr/El Camino Real (17.1% growth)
4) Douglas Dr/Pala Road (17.1% growth)
5) Douglas Dr/Rainier Way (17.1% growth)
6) N. River Road/Douglas Drive (17.1% growth)
7) N. River Road/Avenida Descanso (28.7% growth)
8) N. River Road/Westwinds Mobile Home Park (28.7% growth)
9) N. River Road/Riverview Way (28.7% growth)
10) N. River Road/Calle Montecito (28.7% growth)
11) N. River Road/Redondo Drive (28.7% growth)
12) N. River Road/College Blvd (22.1% growth)
13) College Blvd/Buchanon Park (22.1% growth)
14) College Blvd/Adams St (22.1% growth)
15) College Blvd/Via Cupeno (22.1% growth)
16) College Blvd/SR-76 (22.1% growth)
17) N. River Road/Vandergrift Blvd (28.7% growth)

The peak hour intersection volumes and daily traffic volumes for the Alternative scenario are shown in **Figure 21**. This Alternative analysis did not have any segment or intersection improvements over existing conditions for the LOS analyses. The intersection LOS calculated is shown in **Table 21** with segment LOS shown in **Table 22.** Intersection LOS worksheets are included in **Appendix R**.

Figure 21: Horizon Year 2035 Alternative Volumes

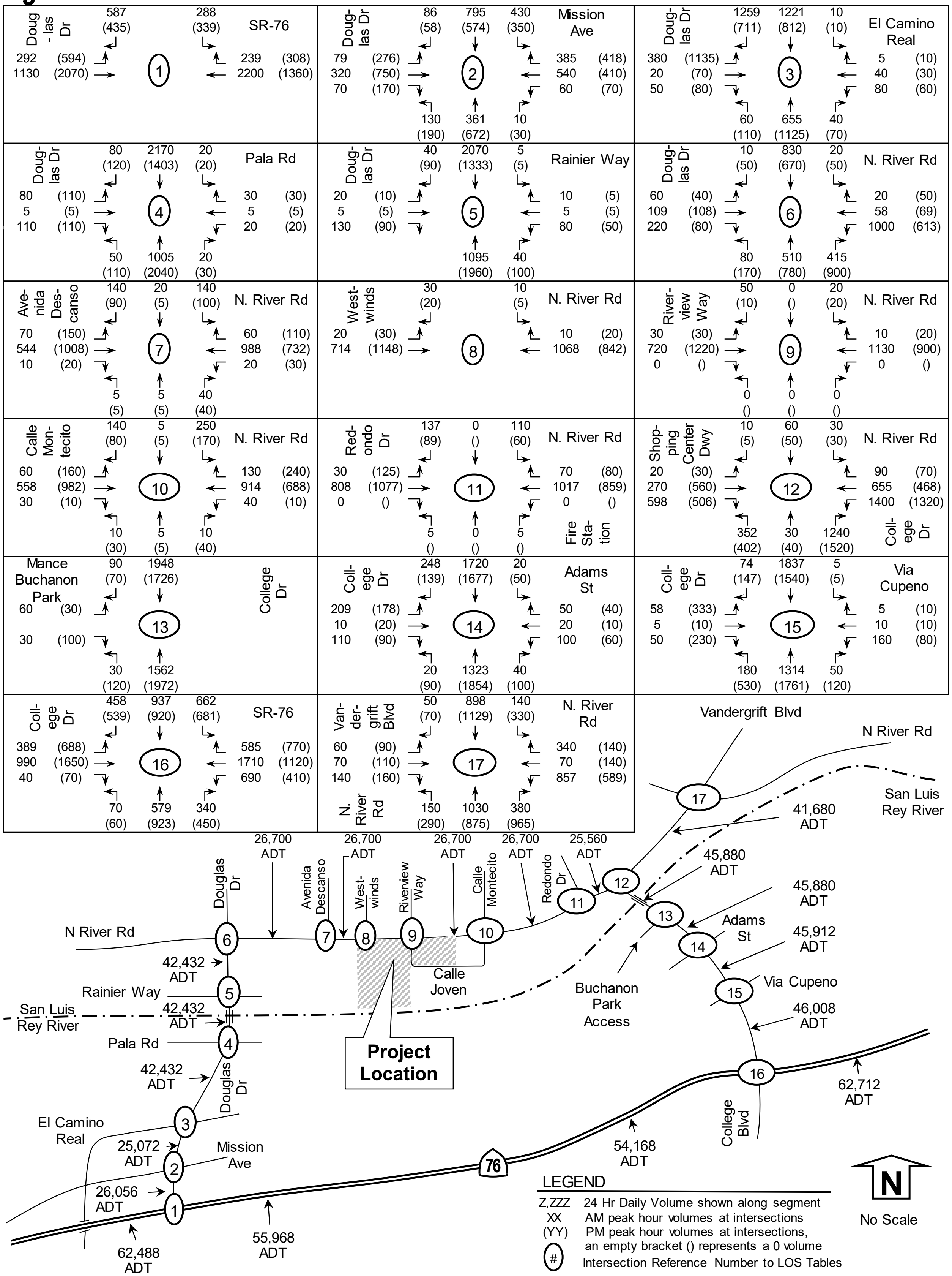


TABLE 21: HORIZON YEAR 2035 ALTERNATIVE INTERSECTION LOS

Intersection and (Analysis)[1]	Movement	Study Period	Horizon Year 2035 Alternative Delay[2]	LOS[3]
1) Douglas Dr at	All	AM	79.3	**E**
SR-76 (S)	All	PM	45.3	D
2) Douglas Dr at	All	AM	45.8	D
Mission Ave (S)	All	PM	63.3	**E**
3) Douglas Dr at	All	AM	23.6	C
El Camino Real (S)	All	PM	45.7	D
4) Douglas Dr at	All	AM	39.3	D
Pala Rd (S)	All	PM	36.8	D
5) Douglas Dr at	All	AM	38.3	D
Rainier Way (S)	All	PM	29.2	C
6) Douglas Dr at	All	AM	48.5	D
N. River Rd (S)	All	PM	28.6	C
7) N. River Rd at	All	AM	20.3	C
Avenida Descanso (S)	All	PM	37.7	D
8) N. River Rd at	SB LR	AM	24.3	C
Westwinds (U)	SB LR	PM	19.8	C
9) N. River Rd at	NB LR	AM	0.0	A
Riverview Way (U)	SB LR	AM	51.4	**F**
	NB LR	PM	0.0	A
	SB LR	PM	78.0	**F**
10) N. River Rd at	All	AM	25.7	C
Calle Montecito (S)	All	PM	25.0	C
11) N. River Rd at	All	AM	10.7	B
Redondo Dr (S)	All	PM	10.7	B
12) N. River Rd at	All	AM	82.0	**F**
College Blvd (S)	All	PM	94.9	**F**
13) College Blvd at	All	AM	15.6	B
Buchanon Park (S)	All	PM	12.0	B
14) College Blvd at	All	AM	31.7	C
Adams St (S)	All	PM	31.8	C
15) College Blvd at	All	AM	23.3	C
Via Cupeno (S)	All	PM	47.5	D
16) College Blvd at	All	AM	111.4	**F**
SR-76 (S)	All	PM	184.6	**F**
17) N. River Rd at	All	AM	66.8	**E**
Vandergrift Blvd (S)	All	PM	122.9	**F**

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service.
Bold indicated unacceptable LOS.

TABLE 22: HORIZON YEAR 2035 ALTERNATIVE SEGMENT VOLUMES AND LOS

Segment	Circulation Element Classification (Alternative)	Horizon Year 2035 (Alternative) Daily Volume	LOS E Capacity	V/C	LOS
Douglas Drive					
1) N. River Rd to Rainier Way	4 Lane Major	42,432	40,000	1.06	**F**
2) Rainier Way to Pala Rd	4 Lane Major	42,432	40,000	1.06	**F**
3) Pala Rd to El Camino Real	4 Lane Major	42,432	40,000	1.06	**F**
4) El Camino Real to Mission Ave	4 Lane Major	25,072	30,000	0.84	**E**
5) Mission Ave to SR-76	4 Lane Major	26,056	40,000	0.65	C
North River Road					
6) Douglas Dr to Avenida Descanso	4 Lane Major	26,700	40,000	0.67	C
7) Avenida Descanso to Riverview Way	4 Lane Major	26,700	40,000	0.67	C
8) Riverview Way to Calle Montecito	4 Lane Major	26,700	40,000	0.67	C
9) Calle Montecito to Redondo Dr	4 Lane Major	26,700	40,000	0.67	C
10) Redondo Dr to College Blvd	4 Lane Major	25,560	40,000	0.64	C
11) College Blvd to Vandergrift Blvd	5 Lane Major	41,680	45,000	0.93	**E**
College Blvd					
12) N. River Rd to Buchanon Park	4 Lane Major	45,880	40,000	1.15	**F**
13) Buchanon Park to Adams St	4 Lane Major	45,880	40,000	1.15	**F**
14) Adams St to Via Cupeno	6 Lane Major	45,912	50,000	0.92	**E**
15) Via Cupeno to SR-76	6 Lane Major	46,008	50,000	0.92	**E**
SR-76					
16) Foussat Rd to Douglas Dr	4 Lane Expressway	62,488	60,000	1.04	**F**
17) Douglas Dr to Rancho Del Oro	4 Lane Expressway	55,968	60,000	0.93	**E**
18) Frazee Rd to College Blvd	4 Lane Expressway	54,168	60,000	0.90	D
19) College Blvd to N. Santa Fe	4 Lane Expressway	62,712	60,000	1.05	**F**

Notes: Daily volume is a 24 hour volume. LOS: Level of Service (bold indicates unacceptable LOS). V/C: Volume to Capacity Ratio.

Under Horizon Year 2035 Alternative conditions, the following study locations were calculated to operate at LOS E/F:

1) Intersection #1: Douglas Dr/SR-76
2) Intersection #2: Douglas Dr/Mission Ave
3) Intersection #9: N. River Rd/Riverview Wy
4) Intersection #12: N. River Rd/College Blvd
5) Intersection #16: SR-76/College Blvd
6) Intersection #17: N. River Rd/Vandergrift Blvd
7) Segment #1: Douglas Dr from N. River Rd to Rainier Wy
8) Segment #2: Douglas Dr from Rainier Wy to Pala Rd
9) Segment #3: Douglas Dr from Pala Rd to El Camino Real
10) Segment #4: Douglas Dr from El Camino Real to Mission Ave
11) Segment #11: N. River Rd from College Blvd to Vandergrift Blvd
12) Segment #12: College Blvd from N. River Rd to Buchanon Park
13) Segment #13: College Blvd from Buchanon Park to Adams St
14) Segment #14: College Blvd from Adams St to Via Cupeno
15) Segment #15: College Blvd from Via Cupeno to SR-76
16) Segment #16: SR-76 from Foussat Rd to Douglas Dr
17) Segment #17: SR-76 from Douglas Dr to Rancho Del Oro
18) Segment #19: SR-76 from College Blvd to N. Santa Fe

3.15 Horizon Year 2035 Alternative plus Project Conditions

This scenario documents the addition of project traffic onto Horizon Year 2035 Alternative conditions for AM, PM, and daily traffic conditions. The project assignment for this Alternative is the same as near-term conditions (Fig 10) as this scenario does not incorporate any new roadway improvements. The peak hour intersection volumes and daily traffic volumes for the Alternative plus Project scenario is shown in **Figure 22**. The intersection LOS is shown in **Table 23** with segment LOS shown in **Table 24.** Intersection LOS worksheets are included in **Appendix S**.

TABLE 23: HORIZON YEAR 2035 ALTERNATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Study	Horizon Year Alt		Horizon Year 2035 Alt + Project			
(Analysis)[1]		Period	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Impact?[5]
1) Douglas Dr at	All	AM	79.3	**E**	80.1	**E**	0.8	No
SR-76 (S)	All	PM	45.3	D	47.1	D	1.8	No
2) Douglas Dr at	All	AM	45.8	D	48.7	D	2.9	No
Mission Ave (S)	All	PM	63.3	**E**	69.4	**E**	6.1	**Yes**
3) Douglas Dr at	All	AM	23.6	C	24.7	C	1.1	No
El Camino Real (S)	All	PM	45.7	D	52.2	D	6.5	No
4) Douglas Dr at	All	AM	39.3	D	49.8	D	10.5	No
Pala Rd (S)	All	PM	36.8	D	49.3	D	12.5	No
5) Douglas Dr at	All	AM	38.3	D	46.3	D	8.0	No
Rainier Way (S)	All	PM	29.2	C	38.3	D	9.1	No
6) Douglas Dr at	All	AM	48.5	D	53.2	D	4.7	No
N. River Rd (S)	All	PM	28.6	C	29.5	C	0.9	No
7) N. River Rd at	All	AM	20.3	C	21.3	C	1.0	No
Avenida Descanso (S)	All	PM	37.7	D	39.9	D	2.2	No
8) N. River Rd at	SB LR	AM	24.3	C	28.2	D	3.9	No
Westwinds (U)	SB LR	PM	19.8	C	22.1	C	2.3	No
9) N. River Rd at	NB LR	AM	0.0	A	12.4	B	12.4	No
Riverview Way (U)	SB LR	AM	51.4	**F**	79.0	**F**	27.6	**Yes**
	NB LR	PM	0.0	A	16.4	C	16.4	No
	SB LR	PM	78.0	**F**	273.8	**F**	195.8	**Yes**
10) N. River Rd at	All	AM	25.7	C	26.2	C	0.5	No
Calle Montecito (S)	All	PM	25.0	C	27.9	C	2.9	No
11) N. River Rd at	All	AM	10.7	B	10.9	B	0.2	No
Redondo Dr (S)	All	PM	10.7	B	11.0	B	0.3	No
12) N. River Rd at	All	AM	82.0	**F**	87.2	**F**	5.2	**Yes**
College Blvd (S)	All	PM	94.9	**F**	103.5	**F**	8.6	**Yes**
13) College Blvd at	All	AM	15.6	B	19.8	B	4.2	No
Buchanon Park (S)	All	PM	12.0	B	12.6	B	0.6	No
14) College Blvd at	All	AM	31.7	C	36.6	D	4.9	No
Adams St (S)	All	PM	31.8	C	34.4	C	2.6	No
15) College Blvd at	All	AM	23.3	C	24.0	C	0.7	No
Via Cupeno (S)	All	PM	47.5	D	48.9	D	1.4	No
16) College Blvd at	All	AM	111.4	**F**	112.9	**F**	1.5	No
SR-76 (S)	All	PM	184.6	**F**	190.3	**F**	5.7	**Yes**
17) N. River Rd at	All	AM	66.8	**E**	67.2	**E**	0.4	No
Vandergrift Blvd (S)	All	PM	122.9	**F**	124.6	**F**	1.7	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service (Bold = unacceptable LOS). 4) Delta is the increase in delay from project. 5) Impact if project traffic exceeds threshold.

Figure 22: Horizon Year 2035 Alternative plus Project Volumes

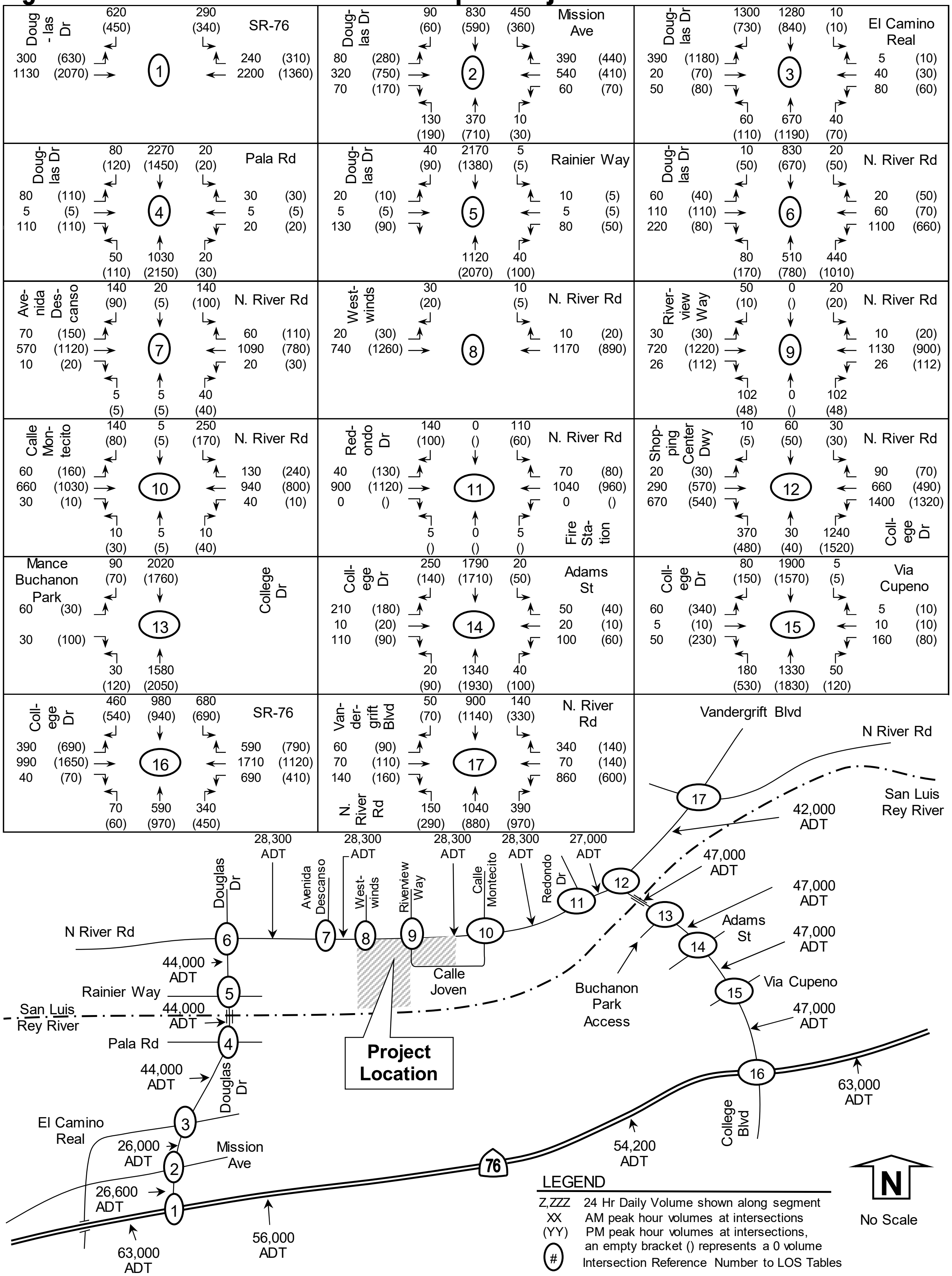


TABLE 24: HORIZON YEAR 2035 ALTERNATIVE PLUS PROJECT SEGMENT LEVEL OF SERVICE

Segment	Circulation Element Classification	Horizon Year 2035 Alt Daily Volume	LOS E Capacity	V/C	LOS	Project Daily Volumes	Horizon Year 2035 Alt + Project Daily Volume	LOS E Capacity	V/C	LOS	V/C Inc.	Impact ?
Douglas Drive												
1) N. River Rd to Rainier Way	4 Lane Major	42,432	40,000	1.061	**F**	1,568	44,000	40,000	1.100	**F**	0.039	**Yes**
2) Rainier Way to Pala Rd	4 Lane Major	42,432	40,000	1.061	**F**	1,568	44,000	40,000	1.100	**F**	0.039	**Yes**
3) Pala Rd to El Camino Real	4 Lane Major	42,432	40,000	1.061	**F**	1,568	44,000	40,000	1.100	**F**	0.039	**Yes**
4) El Camino Real to Mission Ave	4 Lane Major	25,072	30,000	0.836	**E**	928	26,000	30,000	0.867	**E**	0.031	**Yes**
5) Mission Ave to SR-76	4 Lane Major	26,056	40,000	0.651	C	544	26,600	40,000	0.665	C	0.014	No
North River Road												
6) Douglas Dr to Avenida Descanso	4 Lane Major	26,700	40,000	0.668	C	1,600	28,300	40,000	0.708	C	0.040	No
7) Avenida Descanso to Riverview W	4 Lane Major	26,700	40,000	0.668	C	1,600	28,300	40,000	0.708	C	0.040	No
8) Riverview Way to Calle Montecito	4 Lane Major	26,700	40,000	0.668	C	1,600	28,300	40,000	0.708	C	0.040	No
9) Calle Montecito to Redondo Dr	4 Lane Major	26,700	40,000	0.668	C	1,600	28,300	40,000	0.708	C	0.040	No
10) Redondo Dr to College Blvd	4 Lane Major	25,560	40,000	0.639	C	1,440	27,000	40,000	0.675	C	0.036	No
11) College Blvd to Vandergrift Blvd	5 Lane Major	41,680	45,000	0.926	**E**	320	42,000	45,000	0.933	**E**	0.007	No
College Blvd												
12) N. River Rd to Buchanon Park	4 Lane Major	45,880	40,000	1.147	**F**	1,120	47,000	40,000	1.175	**F**	0.028	**Yes**
13) Buchanon Park to Adams St	4 Lane Major	45,880	40,000	1.147	**F**	1,120	47,000	40,000	1.175	**F**	0.028	**Yes**
14) Adams St to Via Cupeno	6 Lane Major	45,912	50,000	0.918	**E**	1,088	47,000	50,000	0.940	**E**	0.022	**Yes**
15) Via Cupeno to SR-76	6 Lane Major	46,008	50,000	0.920	**E**	992	47,000	50,000	0.940	**E**	0.020	No
SR-76												
16) Foussat Rd to Douglas Dr	4 Lane Expy.	62,488	60,000	1.041	**F**	512	63,000	60,000	1.050	**F**	0.009	No
17) Douglas Dr to Rancho Del Oro	4 Lane Expy.	55,968	60,000	0.933	**E**	32	56,000	60,000	0.933	**E**	0.001	No
18) Frazee Rd to College Blvd	4 Lane Expy.	54,168	60,000	0.903	D	32	54,200	60,000	0.903	D	0.001	No
19) College Blvd to N. Santa Fe	4 Lane Expy.	62,712	60,000	1.045	**F**	288	63,000	60,000	1.050	**F**	0.005	No

Notes: Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity Ratio. Impact if project traffic exceed City's threshold. Bold LOS indicates unacceptable LOS. Expy: Expressway.

Under Horizon Year 2035 Alternative plus Project conditions, the following study locations were calculated to operate at LOS E/F AND the project has a transportation impact:

1) Intersection #2: Douglas Dr/Mission Ave
2) Intersection #9: N. River Rd/Riverview Way
3) Intersection #12: N. River Rd/College Blvd
4) Intersection #16: College Blvd/SR-76
5) Segment #1: Douglas Dr from N. River Rd to Rainier Wy
6) Segment #2: Douglas Dr from Rainier Wy to Pala Rd
7) Segment #3: Douglas Dr from Pala Rd to El Camino Real
8) Segment #4: Douglas Dr from El Camino Real to Mission Ave
9) Segment #12: College Blvd from N. River Rd to Buchanon Park
10) Segment #13: College Blvd from Buchanon Park to Adams St
11) Segment #14: College Blvd from Adams St to Via Cupeno

The following roadways elements were calculated to operate at LOS E/F without a transportation impact because the project traffic did not exceed the transportation impact thresholds:

12) Intersection #1: Douglas Dr/SR-76
13) Intersection #17: N. River Rd/Vandergrift Blvd
14) Segment #11: N. River Rd from College Blvd to Vandergrift Blvd
15) Segment #15: College Blvd from Via Cupeno to SR-76 (LOS E)
16) Segment #16: SR-76 from Foussat Rd to Douglas Dr (LOS F)
17) Segment #17: SR-76 from Douglas Dr to Rancho Del Oro (LOS E)
18) Segment #19: SR-76 from College Blvd to N. Santa Fe (LOS F)

3.16 Summary of Transportation Impacts and Recommended Improvements

Based on the City of Oceanside traffic significance criteria, the project is calculated to have transportation impacts under Existing, Near Term, Horizon Year MTP, and Horizon Year Alt conditions. The transportation impacts by location and scenario are summarized in **Table 25**.

TABLE 25: PROJECT TRANSPORTATION IMPACTS WITH 400 UNITS BY SCENARIO

	Existing + Project	Near Term + Project	Horizon Year 2035 MTP + Project	Horizon Year 2035 Alt + Project
Intersections				
T-1 (Int #2): Douglas Dr/ Mission Ave	No Impact	No Impact	Transportation Impact*	Transportation Impact*
T-2 (Int #9): N. River/ Riverview	Transportation Impact**	Transportation Impact**	Transportation Impact**	Transportation Impact**
T-3 (Int #12): N. River Rd/ College Blvd	Transportation Impact*	Transportation Impact*	Transportation Impact*	Transportation Impact*
T-4 (Int #16): SR-76/ College Blvd	Transportation Impact*	Transportation Impact*	Transportation Impact*	Transportation Impact*
Segments				
T-5 (Seg #1): Douglas (N. River to Rainier)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-6 (Seg #2): Douglas (Rainier to Pala)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-7 (Seg #3): Douglas (Pala to El Camino Real)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-8 (Seg #4): Douglas (El Camino Real to Mission)	No Impact	Transportation Impact*	No Impact	Transportation Impact*
T-9 (Seg #12): College (N. River to Buchanon)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-10 (Seg #13): College (Buchanon to Adams)	Transportation Impact*	Transportation Impact*	No Impact	Transportation Impact*
T-11 (Seg #14): College (Adams to Via Cupeno)	No Impact	No Impact	No Impact	Transportation Impact*
Total Transportation Impacts:	**8**	**9**	**4**	**11**

Notes: MTP: Master Transportation Plan. Alt: Alternative. Int: Intersection. Transportation impact if project traffic is calculated to exceed the allowable thresholds under LOS E or F conditions. *The timing and final mitigation will be determined when a final site plan has been submitted along with a new LTS. **Project owner/permittee to install traffic signal with fiber communitation.

The impacted locations are described in detail below; however, the timing and final mitigation will be determined when a final site plan has been submitted.

3.16.1 T-1: Intersection #2 Douglas Drive/Mission Avenue

The intersection of Douglas Drive/Mission Avenue is calculated to have a transportation impact because the project traffic degrades the operations by more than 2.0 seconds of delay under LOS E conditions. This transportation impact is calculated to occur under the Horizon Year 2035 Alt Plus Project scenario.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This intersection has a constrained right-of-way as shown in **Figure 23**; therefore, the future mitigation will be required to work with these constraints.

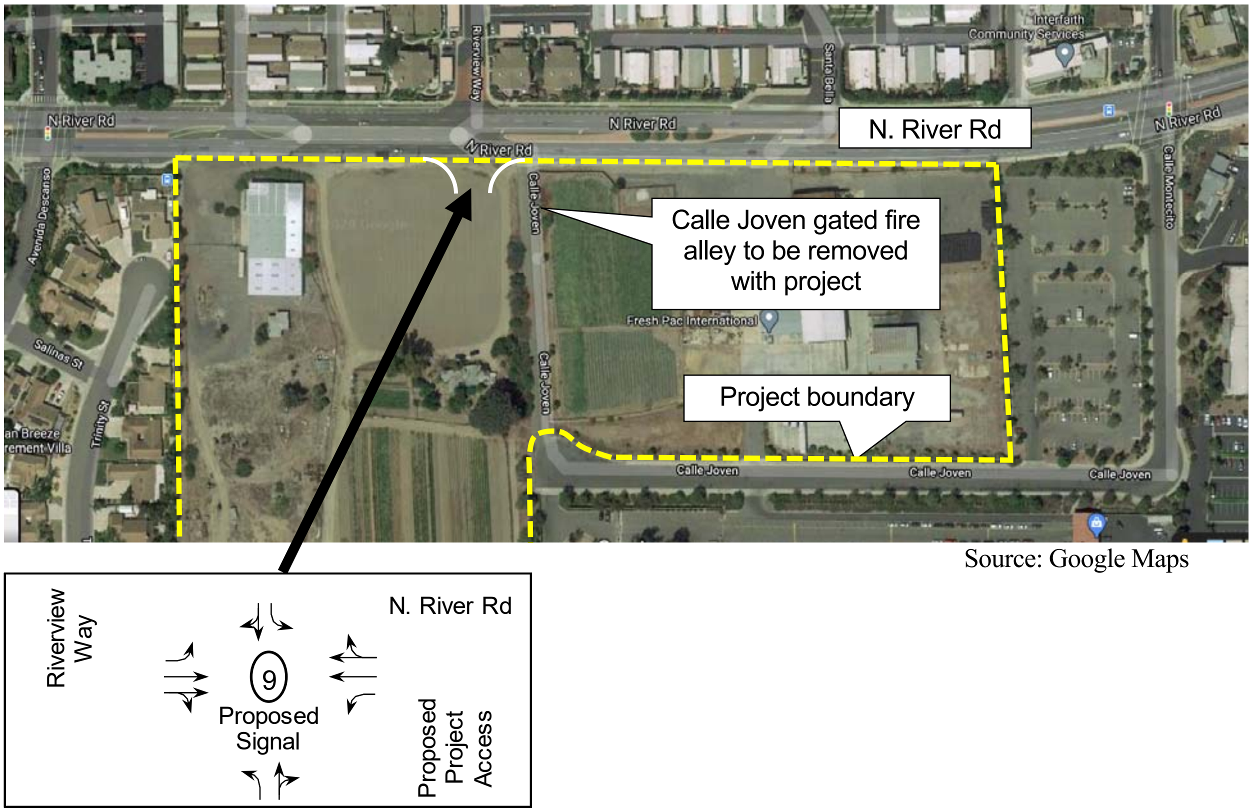
Figure 23: Intersection #2 Douglas Dr/Mission Ave Constrained ROW

Source: Google Maps

3.16.2 T-2: Intersection #9 N. River Road/Riverview Way/Project Access

The intersection of N. River Road/Riverview Way/Project Access is calculated to have a transportation impact because the project traffic degrades the northbound approach LOS to less than LOS D under each plus project scenario. The recommended improvement is to signalize with fiber communication prior to occupancy of the 1st unit based on Warrant 1B “Interruption of Continuous Traffic” in Table 4C-101 (Average Traffic Estimate Form). The owner/permittee will be required to construct a complete and operating traffic signal along with fiber communication at the future project entrance that will align with Riverview Way and construct new sidewalks along the project frontage on N. River Rd to match existing sidewalks. The proposed intersection configuration is shown in **Figure 24**; however, the final design will be determined when the site plan is completed.

Figure 24: Intersection #9 Project Access Preliminary Lane Configuration



Source: Google Maps

The proposed improvement results in acceptable LOS with the higher Year 2035 Alternative + Project volume set. The existing westbound left turn storage bay has sufficient storage for the forecasted demand. The LOS and queuing are shown in **Table 26** with the warrant worksheet and LOS worksheets included in **Appendix T**.

TABLE 26: T-1 PROJECT ACCESS AT RIVERVIEW WAY INTERSECTION #9 LOS AND QUEUING

Intersection	Period	Delay[1]	LOS[2]	WB LT Storage	WB LT 95th %ile Queue
N. River Rd/		Year 2035 Alt + Project		Year 2035 Alt + Project	
Project Access/	AM	13.0	B	135 Feet	35 Feet
Riverview Way	PM	15.9	B	135 Feet	87 Feet

Notes: 1) Delay - HCM Average Control Delay in seconds. 2) LOS: Level of Service.

3.16.3 T-3: Intersection #12 N. River Road/College Boulevard

The intersection of N. River Road/College Blvd is calculated to have a transportation impact because the project traffic degrades the operations by more than 2.0 seconds of delay at LOS E or F. This transportation impact is calculated to occur under each plus project scenario.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This intersection has a constrained right-of-way as shown in **Figure 25**; therefore, the future mitigation will be required to work with these constraints.

Figure 25: Intersection #12 N. River Rd/College Blvd Constrained ROW

Source: Google Maps

3.16.4 T-4: Intersection #16 SR-76/College Boulevard

The intersection of SR-76/College Boulevard is calculated to have a transportation impact because the project traffic degrades the operations by more than 2.0 seconds of delay under LOS F conditions. This transportation impact is calculated to occur under each plus project scenario.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This intersection has a constrained right-of-way as shown in **Figure 26**; therefore, the future mitigation will be required to work with these constraints.

Figure 26: Intersection #16 SR-76/College Blvd Constrained ROW

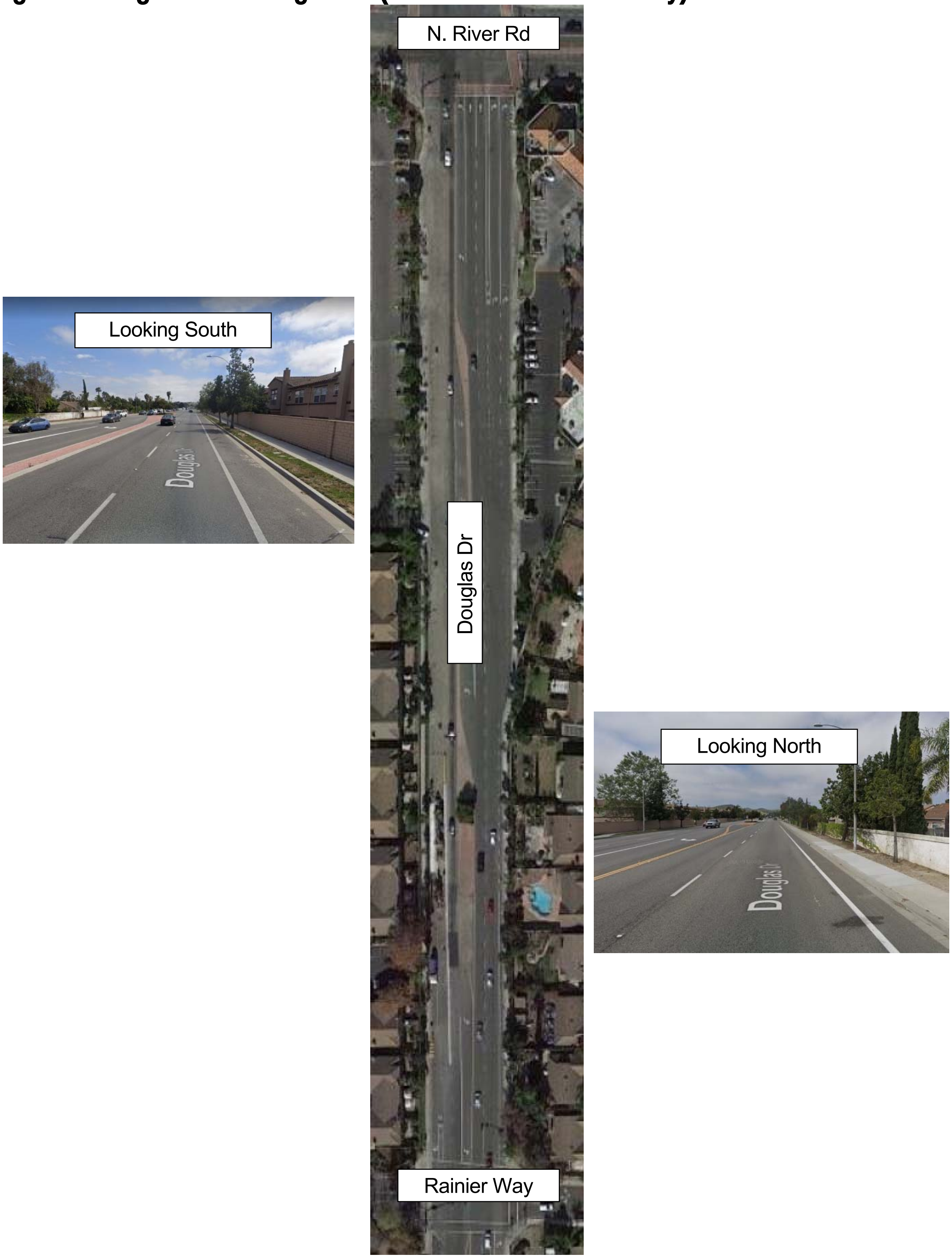
Source: Google Maps

3.16.5 T-5: Segment #1 Douglas Drive (N. River Rd to Rainier Way)

The segment of Douglas Drive from N. River Road to Rainier Way is calculated to have a transportation impact because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E under Existing plus Project conditions, Near Term plus Project conditions, and Horizon Year 2035 Alternative plus Project conditions. A transportation impact is not calculated under the Horizon Year 2035 MTP scenario because the MTP scenario and traffic model included the City's proposed 6 lane segment capacity.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment has a constrained right-of-way as shown in **Figure 27**; therefore, the future mitigation will be required to work with these constraints. Also, widening for additional travel lanes could further constrain the existing un-buffered Class II bike lane and reduce the parkway.

Figure 27: Segment #1 Douglas Dr (N. River Rd to Rainier Way) ROW Constraints



Source: Google Maps

3.16.6 T-6: Segment #2 Douglas Drive (Rainier Way to Pala Road)

The segment of Douglas Drive from Rainier Way to Pala Road is calculated to have a transportation impact because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E/F under Existing plus Project, Near Term plus Project and Horizon Year 2035 Alternative plus Project conditions. A transportation impact is not calculated under the Horizon Year 2035 MTP scenario because the MTP scenario and traffic model included the City's 6 lane segment capacity.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis This segment is constrained by a 4-lane bridge as shown in **Figure 28**; therefore, the future mitigation will be required to work with these constraints.

Figure 28: Segment #2 Douglas Dr (Rainier Way to Pala Rd) Bridge Constraints

Source: Google Maps

3.16.7 T-7: Segment #3 Douglas Drive (Pala Road to El Camino Real)

The segment of Douglas Drive from Pala Road to El Camion Real is calculated to have a transportation impact because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E/F Existing plus Project, Near Term plus Project and Horizon Year 2035 Alternative plus Project conditions. A transportation impact is not calculated under the Horizon Year 2035 MTP scenario because the MTP scenario and traffic model included the City's 6 lane segment capacity.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment has areas of constrained right-of-way as shown in **Figure 29**; therefore, the future mitigation will be required to work with these constraints.

Figure 29: Segment #3 Douglas Dr (Pala Rd to El Camino Real) ROW Constraints

Source: Google Maps

3.16.8 T-8: Segment #4 Douglas Drive (El Camino Real to Mission Avenue)

The segment of Douglas Drive from El Camion Real to Mission Avenue is calculated to have a transportation impact under the Near Term plus Project conditions because the project traffic degrades the LOS from D to E. The project is calculated to have a transportation impact under Horizon Year 2035 Alternative plus Project conditions because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E. A transportation impact is not calculated under existing plus project and Horizon Year 2035 MTP plus project conditions.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment has a constrained right-of-way as shown in **Figure 30**; therefore, the future mitigation will be required to work with these constraints.

Figure 30: Segment #4 Douglas Dr (El Camino Real to Mission Ave) ROW Constraints

Source: Google Maps

3.16.9 T-9: Segment #12 College Boulevard (N. River Road to Buchanon Park)

The segment of College Boulevard from N. River Road to Buchanon Park is calculated to have a transportation impact because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E under Existing plus Project conditions, Near Term plus Project conditions, and Horizon Year 2035 Alternative plus Project conditions. A transportation impact is not calculated under the Horizon Year 2035 MTP scenario because the MTP scenario and traffic model included the City's 6 lane segment capacity.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment is constrained by a 4-lane bridge as shown in **Figure 31**; therefore, the future mitigation will be required to work with these constraints.

Figure 31: Segment #12 College Blvd (N. River Rd to Buchanon) Bridge Constraints

Source: Google Maps

3.16.10 T-10: Segment #13 College Boulevard (Buchanon Park to Adams Street)

The segment of College Boulevard from Buchanon Park to Adams Street is calculated to have a transportation impact because the project traffic degrades the LOS from D to E under Existing plus Project conditions. The project is calculated to have a transportation impact under Near Term plus Project and Horizon Year 2035 Alternative plus Project conditions because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E/F. A transportation impact was not calculated under the Horizon Year 2035 MTP scenario because the MTP scenario and traffic model included the City's 6 lane segment capacity.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment is currently transitioning from 6 lanes (south of Adams St) to 4 lanes to match the 4 lane bridge over San Luis Rey River as shown in **Figure 32**; therefore, the future mitigation will be required to work with these constraints.

Figure 32: Segment #13 College Blvd (Buchanon to Adams) Transition Constraint

Source: Google Maps

3.16.11 T-11: Segment #14 College Boulevard (Adams Street to Via Cupeno)

The segment of College Boulevard from Adams Street to Via Cupeno is calculated to have a transportation impact because the project traffic degrades the volume to capacity ratio by more than 0.02 at LOS E under Horizon Year 2035 Alternative plus Project conditions. A transportation impact is not calculated under Existing plus Project, Near Term plus Project, nor Horizon Year 2035 MTP plus Project conditions.

According to the City's traffic guidelines, a roadway improvement to address a project's transportation impact should be considered on a case-by-case basis. This segment is built-out at 6 lanes as shown in **Figure 33**; therefore, the future mitigation will be required to work with these constraints.

Figure 33: Segment #14 College Blvd (Adams to Via Cupeno) Built-Out at 6 Lanes

Source: Google Maps

# # #

Appendix A

Excerpts from City of Oceanside Bicycle Master Plan 2017 Update

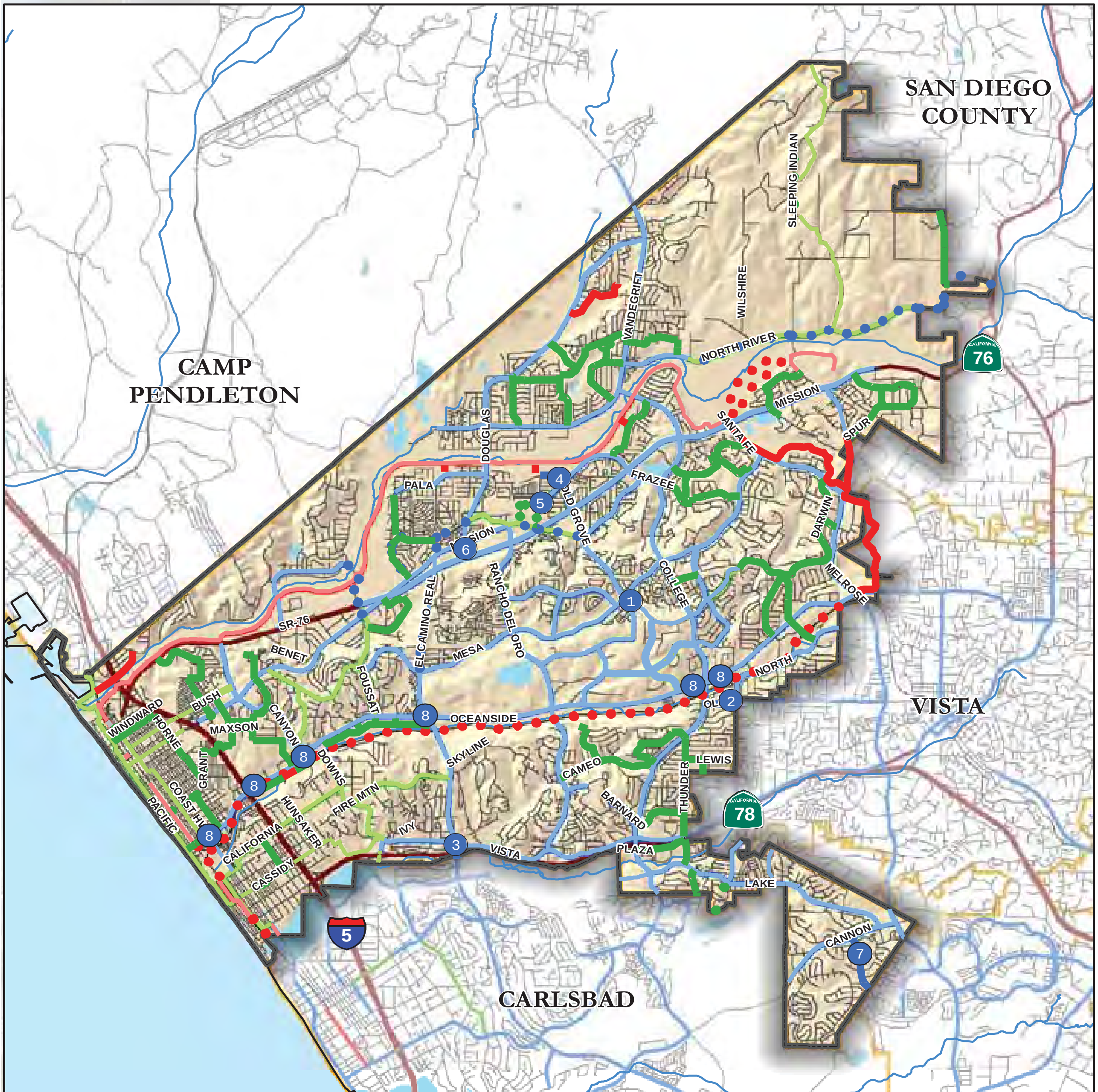
City of Oceanside
Bicycle Master Plan

2017 Bicycle Master Plan Update Prepared by
STC Traffic, Inc.

2008 Bicycle Master Plan Prepared by
KTU+A Planning + Landscape Architecture

In association with
IBI Group Transportation Planning

for the
City of Oceanside, California



Existing Bicycle Facilities

Class 1: Bike Path
Class 2: Bike Lane
Class 3: Bike Route

Planned Bicycle Facilities

Class 1: Bike Path
Class 2: Bike Lane
Class 3: Bike Route

Recommended Facilities

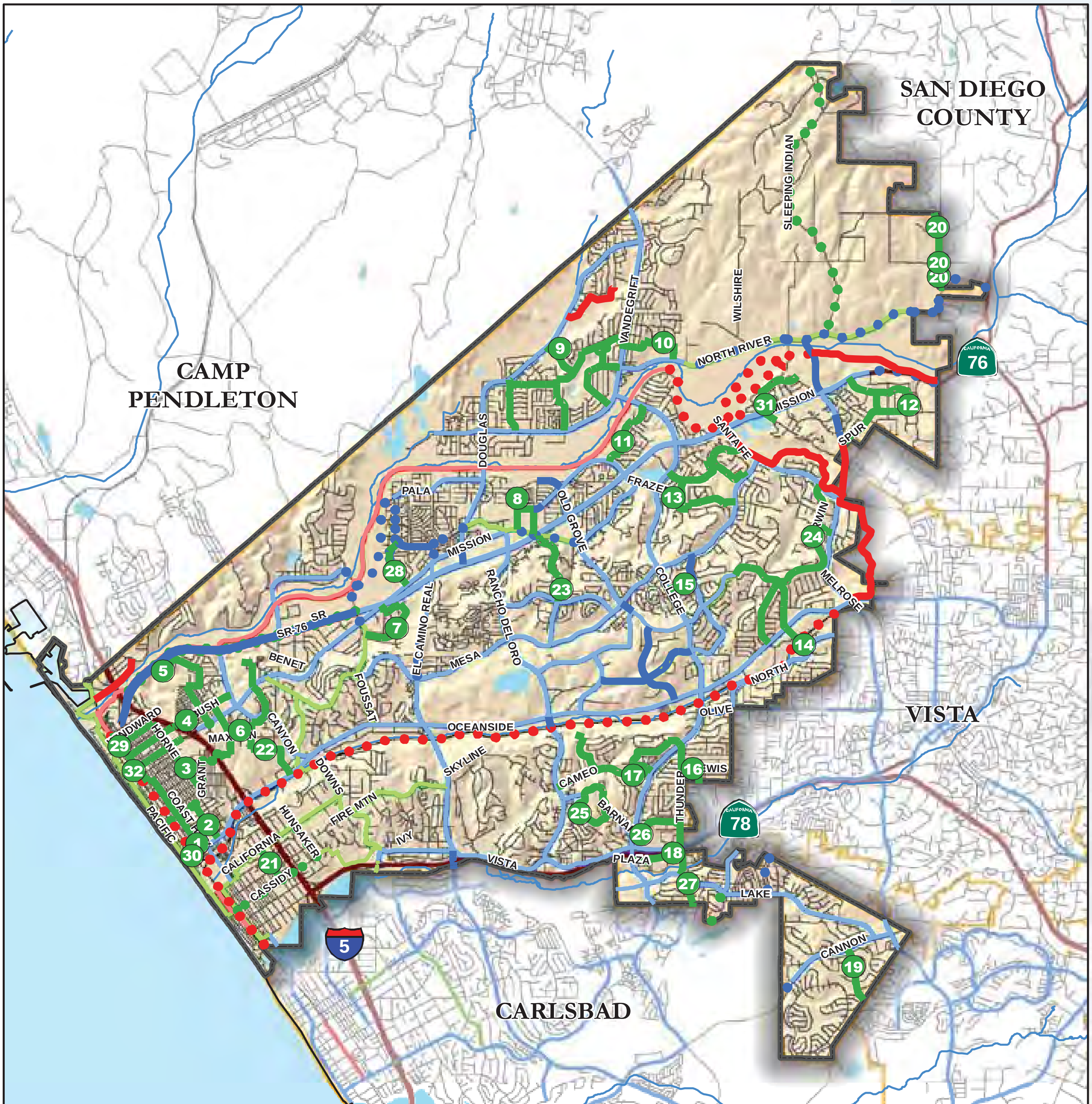
Class 1: Bike Path
Class 2: Bike Lane
Class 3: Bike Route

Data Source: City of Oceanside

Figure 4.2 A: Class 2 Bike Lane Recommended Projects

(2017 Update)

0 0.5 1
Miles



Existing Bicycle Facilities

Class 1: Bike Path

Class 2: Bike Lane

Class 3: Bike Route

Planned Bicycle Facilities

Class 1: Bike Path

Class 2: Bike Lane

Class 3: Bike Route

Recommended Facilities

Class 1: Bike Path

Class 2: Bike Lane

Class 3: Bike Route

Data Source: City of Oceanside General Plan (1995) and KTU+A (2008)

~~Figure 4.3 Class 3 Bike Route Recommended Projects~~

Superceded 2017

0 0.5 1

Miles

Appendix B

Bus Schedules

EFFECTIVE
July 12, 2020

VÁLIDA
12 de julio, 2020

NORTH COUNTY TRANSIT DISTRICT

Rider's GUIDE

Your complete guide to public transit in North County

North County Transit District

Guía de Pasajeros

Su guía completa del transporte público de North County

COASTER SPRINTER BREEZE FLEX LIFT

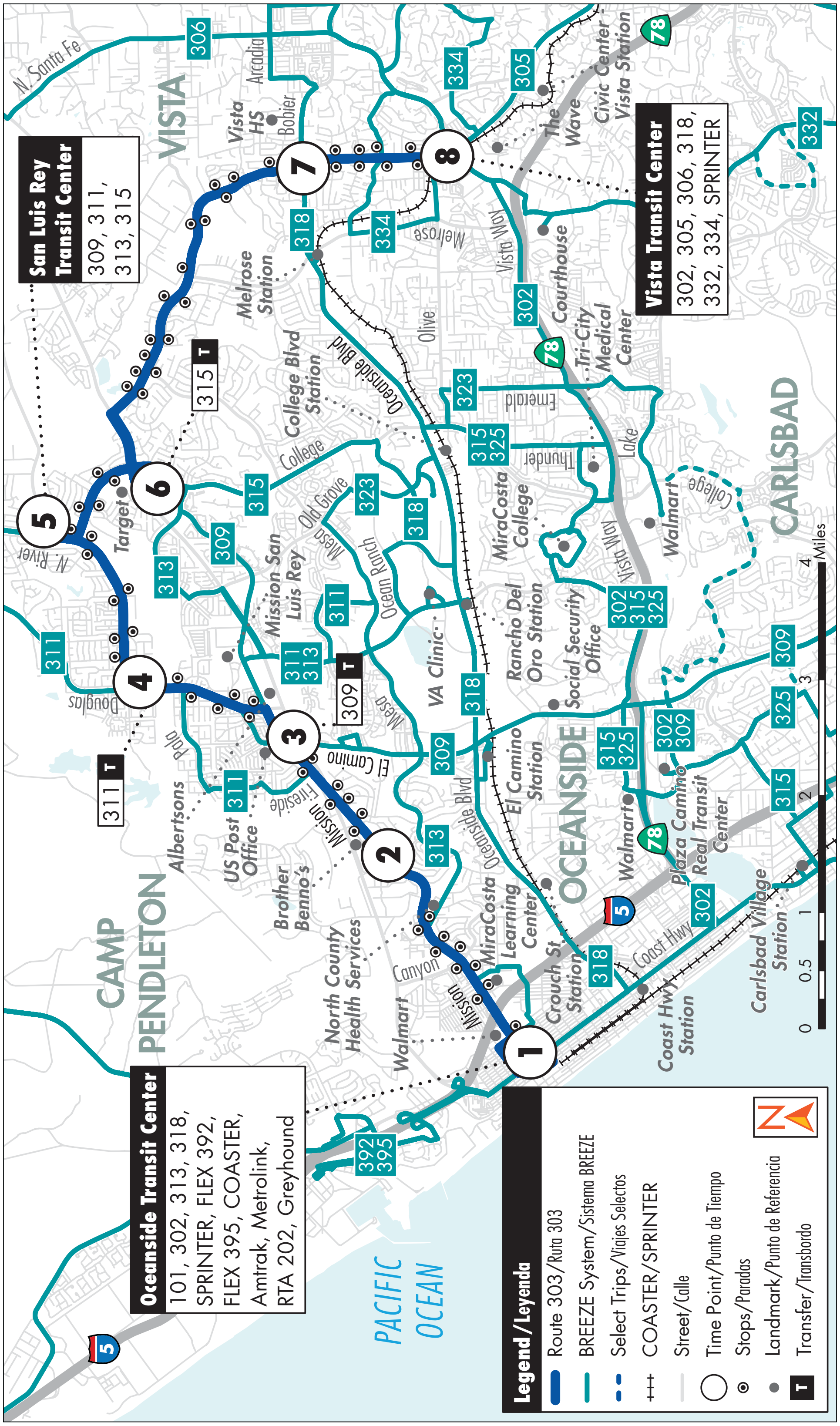
303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

M-F • SA • SU
L-V • SÁ • DO

Destinations/Destinos

- North County Health Services
- MiraCosta College Learning Center
- Town Center North Shopping Center
- Vista High School
- Antique Gas & Steam Engine Museum
- Jefferson Middle School
- Oceanside High School
- Vista Community Clinic



303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Monday - Friday
Eastbound to Vista

Lunes a Viernes • Dirección hacia el este a Vista

Oceanside Transit Center	Mission Ave. & Airport Rd.	Mission Ave. & El Camino Real	Douglas Dr. & N. River Rd.	San Luis Rey Transit Center	Town Center North	N. Santa Fe & Bobier Dr.	Vista Transit Center
1	2	3	4	5	6	7	8
4:05	4:12	4:16	4:21	4:28	4:34	4:43	4:51a
4:35	4:42	4:46	4:51	4:58	5:04	5:13	5:21
5:01	5:09	5:13	5:18	5:26	5:33	5:44	5:52
5:15	5:23	5:27	5:32	5:40	5:47	5:58	6:06
5:31	5:39	5:43	5:48	5:56	6:03	6:14	6:22
5:43	5:52	5:56	6:01	6:09	6:16	6:27	6:36
5:56	6:05	6:09	6:14	6:22	6:31	6:42	6:51
6:09	6:18	6:22	6:28	6:36	6:45	6:57	7:06
6:24	6:33	6:37	6:43	6:51	7:00	7:12	7:21
6:31	6:40	6:46	6:52	7:01	7:10	7:25	7:36
6:46	6:55	7:01	7:07	7:16	7:25	7:40	7:51
7:01	7:12	7:18	7:24	7:33	7:42	7:57	8:08
7:14	7:25	7:31	7:37	7:46	7:55	8:10	8:21
7:34	7:45	7:51	7:57	8:06	8:15	8:28	8:36
7:49	8:00	8:06	8:12	8:21	8:30	8:43	8:51
8:05	8:16	8:22	8:28	8:37	8:46	8:58	9:06
8:20	8:31	8:37	8:43	8:52	9:01	9:13	9:21
8:35	8:46	8:52	8:58	9:07	9:16	9:28	9:36
8:50	9:01	9:07	9:13	9:22	9:31	9:43	9:51
9:05	9:16	9:22	9:28	9:37	9:46	9:58	10:06
9:20	9:31	9:37	9:43	9:52	10:01	10:13	10:21
9:35	9:46	9:52	9:58	10:07	10:16	10:28	10:36
9:50	10:01	10:07	10:13	10:22	10:31	10:43	10:51
10:04	10:15	10:21	10:27	10:36	10:46	10:58	11:06
10:19	10:30	10:36	10:42	10:51	11:01	11:13	11:21
10:34	10:45	10:51	10:57	11:06	11:16	11:28	11:36
10:49	11:00	11:06	11:12	11:21	11:31	11:43	11:51
11:03	11:15	11:21	11:27	11:36	11:46	11:58	**12:06p**
11:17	11:29	11:35	11:42	11:51	**12:01**	**12:13**	**12:21**
11:31	11:43	11:50	11:57	**12:07**	**12:17**	**12:29**	**12:37**
11:46	11:58	**12:05**	**12:12**	**12:22**	**12:32**	**12:44**	**12:52**
12:01	**12:13**	**12:20**	**12:27**	**12:37**	**12:47**	**12:59**	**1:07**
12:16	**12:28**	**12:35**	**12:42**	**12:52**	**1:02**	**1:14**	**1:22**
12:31	**12:43**	**12:50**	**12:57**	**1:07**	**1:17**	**1:29**	**1:37**
12:46	**12:58**	**1:05**	**1:12**	**1:22**	**1:32**	**1:44**	**1:52**
1:01	**1:13**	**1:20**	**1:27**	**1:37**	**1:47**	**1:59**	**2:07**
1:14	**1:26**	**1:33**	**1:41**	**1:51**	**2:01**	**2:13**	**2:22**

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Monday - Friday
Eastbound to Vista
Lunes a Viernes • Dirección hacia el este a Vista

Oceanside Transit Center	Mission Ave. & Airport Rd.	Mission Ave. & El Camino Real	Douglas Dr. & N. River Rd.	San Luis Rey Transit Center	Town Center North	N. Santa Fe & Bobier Dr.	Vista Transit Center
1	2	3	4	5	6	7	8
1:28	1:40	1:47	1:55	2:05	2:15	2:27	2:36
1:39	1:52	1:59	2:07	2:17	2:27	2:40	2:51
1:51	2:04	2:11	2:19	2:29	2:40	2:55	3:06
*2:02	*2:16	*2:23	*2:32	*2:42	*2:53	*3:08	*3:19
2:05	2:19	2:26	2:35	2:45	2:56	3:11	3:22
2:19	2:33	2:40	2:49	2:59	3:10	3:25	3:36
2:32	2:46	2:53	3:02	3:12	3:24	3:39	3:50
2:34	2:48	2:55	3:04	3:14	3:26	3:41	3:52
2:47	3:01	3:08	3:17	3:27	3:40	3:55	4:06
3:02	3:16	3:23	3:32	3:42	3:55	4:10	4:21
3:17	3:31	3:38	3:47	3:57	4:10	4:25	4:36
3:31	3:46	3:53	4:02	4:12	4:25	4:40	4:51
3:46	4:01	4:08	4:17	4:27	4:40	4:55	5:06
4:04	4:17	4:24	4:33	4:43	4:56	5:10	5:19
4:21	4:34	4:41	4:50	5:00	5:13	5:27	5:36
4:34	4:47	4:54	5:03	5:13	5:26	5:40	5:49
4:51	5:04	5:11	5:20	5:30	5:43	5:57	6:06
5:08	5:21	5:28	5:37	5:47	5:59	6:12	6:21
5:23	5:36	5:43	5:52	6:02	6:14	6:27	6:36
5:41	5:54	6:01	6:10	6:20	6:31	6:42	6:51
6:14	6:27	6:34	6:41	6:51	7:02	7:13	7:21
6:47	6:59	7:06	7:13	7:22	7:32	7:43	7:51
7:20	7:31	7:37	7:44	7:53	8:02	8:13	8:21
7:52	8:03	8:09	8:15	8:24	8:33	8:44	8:51
8:32	8:43	8:49	8:55	9:03	9:10	–	–
9:01	9:11	9:16	9:22	9:29	9:36	9:46	9:52
9:35	9:45	9:50	9:55	10:02	10:09	–	–
10:02	10:12	10:17	10:22	10:29	10:36	10:45	10:51
10:39	10:47	10:50	10:55	11:01	11:07	11:15	11:21
11:10	11:18	11:21	11:26	11:32	11:38	11:46	11:52
11:36	11:44	11:47	11:52	11:58	12:04a	–	–

* **Operates Wednesdays only.**
Opera solamente los Miércoles.

Trip operates when Oceanside High School is open. Trip operates on school days in regular school year (not during summer school).
Los viajes operan cuando Oceanside High School está abierto. Puede haber un servicio adicional durante este horario para acomodar a una alta demanda de pasajeros.

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Monday - Friday
Westbound to Oceanside
Lunes a Viernes • Dirección hacia el oeste a Oceanside

Vista Transit Center	N. Santa Fe & Bobier Dr.	Town Center North	San Luis Rey Transit Center	Douglas Dr. & N. River Rd.	Mission Ave. & El Camino Real	Mission Ave. & Airport Rd.	Oceanside Transit Center
8	**7**	**6**	**5**	**4**	**3**	**2**	**1**
–	–	4:05	4:13	4:21	4:26	4:33	4:44a
5:06	5:10	5:21	5:29	5:37	5:42	5:49	6:00
5:36	5:40	5:51	5:59	6:07	6:14	6:21	6:32
5:51	5:55	6:06	6:14	6:22	6:29	6:36	6:47
–	–	6:16	6:25	6:33	6:40	6:47	7:00
6:06	6:11	6:23	6:32	6:40	6:47	6:54	7:07
6:21	6:26	6:38	6:47	6:55	7:02	7:09	7:22
–	–	6:38	6:47	6:55	7:02	7:10	7:25
6:36	6:41	6:54	7:03	7:11	7:18	7:26	7:41
6:51	6:56	7:09	7:18	7:26	7:33	7:41	7:56
7:06	7:12	7:29	7:38	7:46	7:53	8:01	8:16
7:18	7:24	7:41	7:50	7:58	8:05	8:13	8:28
7:36	7:42	7:59	8:08	8:16	8:23	8:31	8:46
7:46	7:52	8:09	8:18	8:26	8:33	8:41	8:56
8:06	8:11	8:24	8:32	8:40	8:47	8:55	9:09
8:21	8:26	8:39	8:46	8:54	9:01	9:08	9:22
8:36	8:41	8:54	9:01	9:09	9:15	9:22	9:36
8:51	8:56	9:09	9:16	9:24	9:30	9:37	9:51
9:06	9:11	9:24	9:31	9:39	9:45	9:52	10:06
9:21	9:26	9:39	9:46	9:54	10:00	10:07	10:21
9:36	9:41	9:54	10:01	10:09	10:15	10:22	10:36
9:51	9:56	10:09	10:16	10:24	10:30	10:37	10:51
10:06	10:11	10:24	10:33	10:41	10:47	10:54	11:08
10:23	10:28	10:41	10:50	10:58	11:04	11:11	11:25
10:36	10:41	10:54	11:03	11:11	11:17	11:24	11:38
10:53	10:58	11:11	11:20	11:28	11:34	11:41	11:55
11:06	11:11	11:24	11:33	11:41	11:47	11:54	**12:09p**
11:22	11:27	11:40	11:49	11:57	**12:03**	**12:10**	**12:25**
11:36	11:41	11:54	**12:03**	**12:11**	**12:17**	**12:24**	**12:39**
11:52	11:57	**12:10**	**12:19**	**12:27**	**12:33**	**12:40**	**12:55**
12:06	**12:11**	**12:24**	**12:33**	**12:42**	**12:48**	**12:55**	**1:10**
12:21	**12:26**	**12:39**	**12:48**	**12:57**	**1:03**	**1:10**	**1:25**
12:36	**12:41**	**12:54**	**1:03**	**1:12**	**1:18**	**1:25**	**1:40**
12:51	**12:56**	**1:09**	**1:18**	**1:27**	**1:33**	**1:40**	**1:55**

Trip operates on school days in regular school year (not during summer school).
El viaje opera los días escolares durante el año regular de clases (no durante el verano).

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Monday - Friday
Westbound to Oceanside
Lunes a Viernes • Dirección hacia el oeste a Oceanside

Vista Transit Center	N. Santa Fe & Bobier Dr.	Town Center North	San Luis Rey Transit Center	Douglas Dr. & N. River Rd.	Mission Ave. & El Camino Real	Mission Ave. & Airport Rd.	Oceanside Transit Center
8	**7**	**6**	**5**	**4**	**3**	**2**	**1**
1:06	1:11	1:24	1:33	1:42	1:48	1:55	2:10
1:21	1:26	1:39	1:48	1:57	2:03	2:10	2:25
1:36	1:41	1:54	2:03	2:12	2:18	2:25	2:40
1:51	1:56	2:09	2:18	2:27	2:33	2:40	2:55
2:06	2:11	2:25	2:34	2:43	2:50	2:57	3:12
2:17	2:22	2:39	2:49	2:58	3:05	3:12	3:27
2:36	2:43	3:01	3:11	3:20	3:28	3:36	3:51
2:51	2:57	3:15	3:25	3:34	3:41	3:49	4:04
3:06	3:12	3:30	3:40	3:49	3:56	4:04	4:19
3:15	3:21	3:39	3:49	3:58	4:05	4:13	4:28
3:36	3:42	4:00	4:10	4:19	4:26	4:33	4:48
3:46	3:52	4:10	4:20	4:29	4:36	4:43	4:58
4:06	4:12	4:30	4:40	4:49	4:56	5:03	5:18
4:17	4:23	4:41	4:51	5:00	5:07	5:13	5:28
4:36	4:42	5:00	5:10	5:19	5:26	5:32	5:47
4:47	4:53	5:11	5:21	5:30	5:37	5:43	5:58
5:06	5:12	5:30	5:40	5:49	5:55	6:01	6:15
5:19	5:25	5:43	5:53	6:02	6:08	6:14	6:28
5:36	5:42	5:59	6:09	6:18	6:24	6:30	6:43
5:51	5:57	6:14	6:24	6:33	6:39	6:45	6:58
6:06	6:12	6:27	6:35	6:43	6:49	6:55	7:08
6:36	6:42	6:56	7:04	7:12	7:18	7:24	7:37
7:06	7:12	7:26	7:33	7:41	7:46	7:52	8:05
7:36	7:42	7:56	8:03	8:11	8:16	8:22	8:35
8:06	8:12	8:24	8:31	8:39	8:44	8:49	9:00
8:36	8:42	8:54	9:01	9:09	9:14	9:19	9:30
9:06	9:11	9:23	9:30	9:36	9:41	9:46	9:57
10:06	10:10	10:21	10:27	10:33	10:38	10:43	10:53

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Saturday & Sunday
Eastbound to Vista
Sábado y Domingo • Dirección hacia el este a Vista

Oceanside Transit Center	Mission Ave. & Airport Rd.	Mission Ave. & El Camino Real	Douglas Dr. & N. River Rd.	San Luis Rey Transit Center	Town Center North	N. Santa Fe & Bobier Dr.	Vista Transit Center
1	2	3	4	5	6	7	8
4:33	4:40	4:44	4:47	4:53	4:59a	–	–
5:38	5:46	5:50	5:55	6:01	6:08	6:18	6:25
6:04	6:13	6:17	6:22	6:28	6:35	6:45	6:52
6:33	6:42	6:46	6:51	6:59	7:06	7:16	7:23
6:57	7:06	7:10	7:16	7:24	7:31	7:42	7:50
7:27	7:37	7:41	7:48	7:56	8:04	8:15	8:23
7:52	8:02	8:06	8:13	8:21	8:29	8:40	8:48
8:12	8:22	8:26	8:33	8:41	8:49	9:00	9:08
8:29	8:40	8:46	8:53	9:01	9:09	9:20	9:28
8:49	9:00	9:06	9:13	9:21	9:29	9:40	9:48
9:08	9:19	9:25	9:32	9:40	9:49	10:00	10:08
9:33	9:44	9:50	9:57	10:05	10:14	10:25	10:33
9:48	9:59	10:05	10:12	10:20	10:29	10:40	10:48
10:01	10:12	10:19	10:27	10:36	10:46	10:57	11:05
10:18	10:29	10:36	10:44	10:53	11:03	11:14	11:22
10:42	10:53	11:01	11:09	11:18	11:28	11:39	11:48
10:58	11:09	11:17	11:25	11:36	11:46	11:57	**12:06p**
11:13	11:24	11:32	11:40	11:51	**12:02**	**12:13**	**12:22**
11:39	11:50	11:58	**12:06**	**12:17**	**12:28**	**12:39**	**12:48**
12:00	**12:11**	**12:19**	**12:27**	**12:38**	**12:49**	**1:00**	**1:09**
12:13	**12:24**	**12:32**	**12:40**	**12:51**	**1:02**	**1:13**	**1:22**
12:36	**12:48**	**12:57**	**1:05**	**1:16**	**1:27**	**1:39**	**1:48**
12:53	**1:05**	**1:14**	**1:22**	**1:33**	**1:44**	**1:56**	**2:05**
1:10	**1:22**	**1:31**	**1:39**	**1:50**	**2:01**	**2:13**	**2:22**
1:36	**1:48**	**1:57**	**2:05**	**2:16**	**2:27**	**2:39**	**2:48**
1:53	**2:05**	**2:14**	**2:22**	**2:33**	**2:44**	**2:56**	**3:05**
2:11	**2:23**	**2:31**	**2:39**	**2:50**	**3:01**	**3:13**	**3:22**
2:40	**2:52**	**3:00**	**3:08**	**3:19**	**3:30**	**3:42**	**3:51**
2:54	**3:06**	**3:14**	**3:22**	**3:33**	**3:44**	**3:56**	**4:05**
3:11	**3:23**	**3:31**	**3:39**	**3:50**	**4:01**	**4:13**	**4:22**
3:40	**3:52**	**4:00**	**4:08**	**4:19**	**4:30**	**4:42**	**4:51**
4:12	**4:24**	**4:32**	**4:40**	**4:51**	**5:01**	**5:12**	**5:21**
4:43	**4:55**	**5:02**	**5:10**	**5:21**	**5:31**	**5:42**	**5:51**
5:14	**5:26**	**5:33**	**5:41**	**5:52**	**6:02**	**6:13**	**6:21**
5:44	**5:56**	**6:03**	**6:11**	**6:22**	**6:32**	**6:43**	**6:51**
6:15	**6:27**	**6:34**	**6:41**	**6:52**	**7:02**	**7:13**	**7:21**
6:46	**6:58**	**7:04**	**7:11**	**7:22**	**7:32**	**7:43**	**7:51**

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Saturday & Sunday
Eastbound to Vista
Sábado y Domingo • Dirección hacia el este a Vista

Oceanside Transit Center	Mission Ave. & Airport Rd.	Mission Ave. & El Camino Real	Douglas Dr. & N. River Rd.	San Luis Rey Transit Center	Town Center North	N. Santa Fe & Bobier Dr.	Vista Transit Center
1	2	3	4	5	6	7	8
7:19	7:30	7:35	7:42	7:53	8:02	–	–
7:50	8:01	8:06	8:13	8:24	8:33	8:44	8:51
8:32	8:43	8:48	8:55	9:03	9:11	–	–
8:58	9:08	9:13	9:19	9:26	9:34	9:44	9:51
9:31	9:40	9:45	9:50	9:57	10:04	–	–
10:01	10:10	10:15	10:20	10:27	10:34	10:44	10:51
10:31	10:39	10:43	10:48	10:55	11:01	–	–
11:08	11:15	11:19	11:24	11:31	11:37	–	–
11:31	11:38	11:42	11:47	11:54	12:00a	–	–

303 Oceanside to Vista via Town Center North

Oceanside a Vista vía Town Center North

See pg. 6 for Holiday schedules/Ver pág. 236 para obtener los horarios de días festivos

Saturday & Sunday
Westbound to Oceanside

Sábado y Domingo • Dirección hacia el oeste a Oceanside

Vista Transit Center 8	N. Santa Fe & Bobier Dr. 7	Town Center North 6	San Luis Rey Transit Center 5	Douglas Dr. & N. River Rd. 4	Mission Ave. & El Camino Real 3	Mission Ave. & Airport Rd. 2	Oceanside Transit Center 1
6:06	6:10	6:21	6:29	6:37	6:42	6:49	7:00a
6:36	6:40	6:52	7:00	7:08	7:13	7:20	7:31
7:06	7:11	7:23	7:31	7:39	7:44	7:51	8:04
7:36	7:41	7:53	8:01	8:09	8:14	8:21	8:34
8:06	8:11	8:23	8:31	8:39	8:45	8:52	9:05
8:25	8:30	8:42	8:50	8:58	9:04	9:11	9:24
8:45	8:50	9:02	9:10	9:18	9:24	9:31	9:44
9:05	9:10	9:23	9:31	9:39	9:46	9:53	10:07
9:23	9:28	9:41	9:49	9:57	10:04	10:11	10:25
9:45	9:50	10:03	10:11	10:19	10:26	10:33	10:47
10:06	10:11	10:25	10:33	10:42	10:50	10:57	11:11
10:22	10:27	10:41	10:49	10:58	11:06	11:13	11:27
10:38	10:43	10:57	11:05	11:14	11:22	11:29	11:43
11:05	11:10	11:24	11:32	11:41	11:49	11:56	**12:10p**
11:19	11:24	11:38	11:46	11:55	**12:03**	**12:10**	**12:24**
11:38	11:43	11:57	**12:05**	**12:14**	**12:22**	**12:29**	**12:43**
12:05	**12:10**	**12:25**	**12:33**	**12:42**	**12:50**	**12:57**	**1:11**
12:19	**12:24**	**12:39**	**12:47**	**12:56**	**1:04**	**1:11**	**1:25**
12:38	**12:43**	**12:58**	**1:06**	**1:15**	**1:23**	**1:30**	**1:44**
1:05	**1:10**	**1:25**	**1:33**	**1:41**	**1:49**	**1:56**	**2:10**
1:20	**1:25**	**1:40**	**1:48**	**1:56**	**2:04**	**2:11**	**2:25**
1:38	**1:43**	**1:58**	**2:06**	**2:14**	**2:22**	**2:29**	**2:43**
2:05	**2:10**	**2:25**	**2:33**	**2:41**	**2:49**	**2:56**	**3:10**
2:21	**2:26**	**2:41**	**2:49**	**2:57**	**3:05**	**3:12**	**3:26**
2:38	**2:43**	**2:58**	**3:06**	**3:14**	**3:22**	**3:29**	**3:43**
3:05	**3:10**	**3:25**	**3:33**	**3:41**	**3:49**	**3:56**	**4:10**
3:21	**3:26**	**3:41**	**3:49**	**3:57**	**4:05**	**4:12**	**4:26**
3:38	**3:43**	**3:58**	**4:06**	**4:14**	**4:22**	**4:29**	**4:43**
4:06	**4:11**	**4:26**	**4:34**	**4:42**	**4:50**	**4:57**	**5:11**
4:36	**4:41**	**4:56**	**5:04**	**5:12**	**5:20**	**5:27**	**5:41**
5:06	**5:12**	**5:27**	**5:35**	**5:43**	**5:50**	**5:57**	**6:11**
5:36	**5:42**	**5:57**	**6:05**	**6:13**	**6:20**	**6:27**	**6:41**
6:06	**6:11**	**6:26**	**6:34**	**6:42**	**6:48**	**6:55**	**7:08**
6:36	**6:41**	**6:54**	**7:02**	**7:10**	**7:16**	**7:23**	**7:36**
7:06	**7:11**	**7:24**	**7:32**	**7:40**	**7:46**	**7:52**	**8:05**
8:06	**8:11**	**8:24**	**8:32**	**8:40**	**8:46**	**8:52**	**9:05**
9:06	**9:11**	**9:22**	**9:30**	**9:37**	**9:42**	**9:47**	**9:59**
10:06	**10:10**	**10:21**	**10:29**	**10:35**	**10:40**	**10:45**	**10:55**

Appendix C

Excerpts from City of Oceanside VMT and LOS Guidelines

City of Oceanside

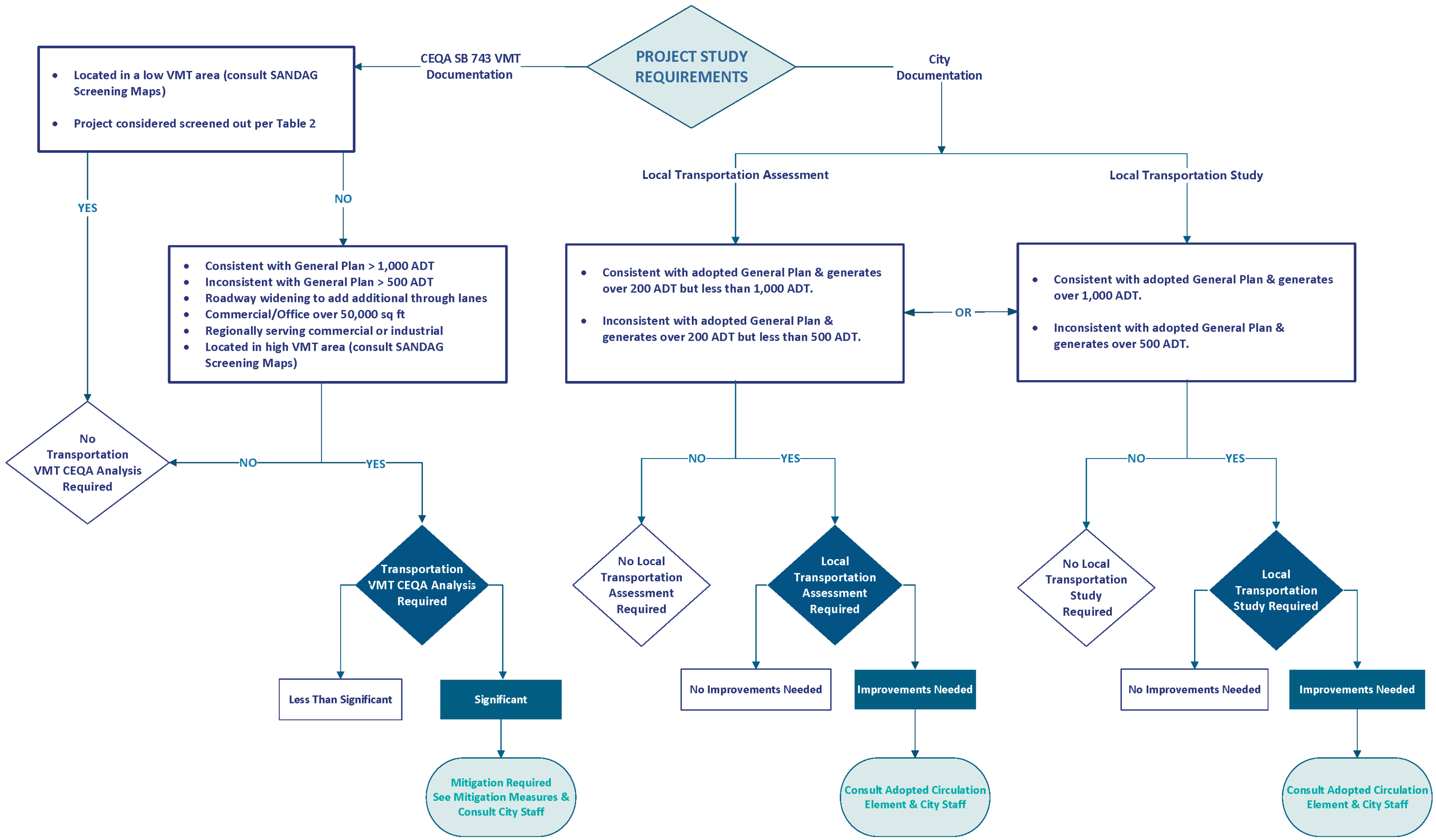
Traffic Impact Analysis Guidelines for

Vehicle Miles Traveled (VMT) and Level of Service Assessment

August 2020
Final Version

city of OCEANSIDE CA

Figure 8-1 Project Study Requirements



* Projects are not confined to what is listed above and will need to be coordinated with City Staff to determine study requirements for developments not listed.
This flowchart is a generalization, it is up to the City's discretion to determine if additional analyses will be required and if potential mitigation or improvements are acceptable.

9.0 San Diego Regional Guidelines For VMT

The City of Oceanside utilizes the Institute of Transportation Engineers (ITE) San Diego Regional Guidelines (May 2019) to establish thresholds and methodology for VMT analysis. For analysis purposes the most recent version of these guidelines shall be utilized. The following sections summarize the VMT thresholds requirements for Oceanside in alignment with ITE. Thorough analysis explanation can be found in the most recent ITE guidance.

Minimum Threshold for VMT Analysis

Based on the recommendations of the Institute of Transportation Engineers (ITE) for the San Diego section, **Table 3** indicates when a VMT analysis for CEQA is required. This is based on keeping consistent with the thresholds previously used and *SANDAG's Not So Brief Guide Trip Generation (2002)*. These thresholds are based on the understanding that SANDAG trip generation rates differ from ITE trip generation rates which OPR's recommendations are based on.

Projects Consistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that support these goals will adhere to the following VMT analysis thresholds identified in Table 3.

Table 3 – Threshold for VMT Analysis for Projects Consistent with the Adopted General Plan

	VMT Analysis Not Needed	VMT Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 1,000 ADT	Greater than 1,000 ADT

(1) If ADT is equal to 1,000 ADT, VMT analysis is required.

Projects Inconsistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that are not in support of the General Plan have a lower VMT threshold and will require a General Plan Amendment. The following VMT analysis thresholds for projects that are inconsistent are identified in **Table 4**.

Table 4 – Threshold for VMT Analysis for Projects Inconsistent with the Adopted General Plan

	VMT Analysis Not Needed	VMT Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 500 ADT	Greater than 500 ADT

(1) If ADT is equal to 500 ADT, VMT analysis is required.

The thresholds identified in Table 3 and Table 4 stem from the professional expertise and judgement of the ITE San Diego section. These thresholds reflect what is appropriate for the San Diego region to use for VMT and have previously helped determine LOS impacts.

VMT Thresholds

This section identifies what type of VMT analysis is required based on the land use and thresholds identified in the previous section. If a project qualifies for a VMT analysis, the VMT analysis can be compared based on City-wide, Regional, or community basis. The method of comparison shall be agreed upon by the City Traffic Engineer and shall be appropriate based on the use of the site.

The following defines the metrics identified in **Table 5**. It is important the appropriate metrics are applied for each project.

VMT/Capita:

Includes all vehicle-based person trips grouped and summed to the home location of individuals who are drivers or passengers on each trip. It includes home-based and non-home-based trips. The VMT for each home is then summed for all homes in a particular census tract and divided by the population of that census tract to arrive at Resident VMT/Capita.

VMT/Employee:

Includes all vehicle-based person trips grouped and summed to the work location of individuals on the trip. This includes all trips, not just work-related trips. The VMT for each work location is then summed for all work locations in a particular census tract and divided by the number of employees of that census tract to arrive at Employee VMT/Employee.

Small Projects

Small projects, under 2,400 ADT, shall utilize the most recent version of the SANDAG SB 743 Concept Maps. SANDAG has prepared an online mapping system that calculates average VMT/capita and VMT/employee at the census tract level. This tool determines the project's VMT/employee or VMT/capita to be compared to community, city, and/or regional averages. **Appendix C** provides an example of how to use the SANDAG Concept Maps to determine the project’s VMT.

Large Projects

Projects consisting of 2,400 ADT or higher will require the use of the most recent SANDAG model to determine VMT. The SANDAG transportation model provides a systematic analytical platform so that different alternatives and inputs can be evaluated in an iterative and controlled environment.

Table 5 identifies the significance thresholds for proposed land uses. Projects that exceed the significance thresholds are considered significant and will require VMT analysis and mitigation.

Table 5 – City of Oceanside Project Threshold

Project Type	Metric	Significance Threshold(1)
Residential	Resident VMT / Capita	15 % below regional average
Commercial	Employee VMT / Employee	15 % below regional average
Industrial	Employee VMT / Employee	15 % below regional average
Retail (2)	Net increase in the regional VMT	Net increase in regional VMT
Mixed-Use	Evaluate each land use separately	Based on proposed land use
Redevelopment (3)	Based on the proposed land use	Based on the proposed land use

(1) The City may request the applicant to analyze VMT using a more localized threshold if the project requires.

(2) Locally serving retail is presumed to decrease VMT however retail projects over 50,000 square feet are considered regionally serving.

(3) A redevelopment project that reduces VMT is presumed to have less than a significant impact and is screened out. The removal of affordable housing will require VMT analysis.

10.0 Mitigation Measures and Strategies for VMT Reduction

A project that exceeds the thresholds identified in the previous tables is considered to have a significant impact and will require mitigation measures and strategies. With appropriate mitigation the project may be able to apply VMT reductions to part or all of the project depending on the land use and strategy chosen. It is critical to implement strategies that are appropriate for the land use, for example, a residential project would not implement a telecommute strategy but may include providing a bike facility and amenities on-site.

SANDAG Mobility Management Guidebook

The purpose of the mitigation measures and strategies is to reduce the VMT generated by the project through a reduction of the distance driven or reducing the number of vehicle trips. It is recommended the SANDAG Mobility Management Guidebook (2019) be consulted to determine mitigation measures for the project site.

The guidebook consists of the following resources:

- Mobility Management Guidebook
- VMT Reduction Calculator Tool
- Calculator Design Document
- Recommendations for Application
- User Training Videos

Figure 10-1 identifies the potential mobility management strategies included in the guidebook that are recommended for a project exceeding the VMT thresholds. It is also recommended the SANDAG iCommute and MTS programs be utilized for projects generating employment. Several opportunities included in these programs are identified in **Table 6**. **Appendix D** contains the SANDAG Mobility Management Guidebook for reference.

Figure 10-1 Mobility Management Strategies

Level	Strategy Type	Strategy Name	Included in VMT Calculator?
Project/Site Level	Employer Commute Programs	Comprehensive Employer Commute Program	√
		Employer Carpool Program	√
		Employer Transit Pass Subsidy	√
		Employer Vanpool Program	√
		Employer Telework Program	√
		Employer Guaranteed Ride Home Program	
		On-Site Bike Amenities	
	Land Use Strategies	Higher-Density Development	
		Transit-Oriented Development	√
		Mixed-Use Development	√
	Parking Management	Parking Pricing	√
		Parking Cash-Out	√
		Reduced Parking	
		Unbundled Parking	
		Smart Parking	
		Shared Parking	
		Shared Mobility Parking	
		Flexible Curb Space	
Community/City Level	Neighborhood Enhancements	Street Connectivity Improvement	√
		Pedestrian Facility Improvement	√
		Bikeway Network Expansion	√
		Bike Facility Improvement	√
		Bikeshare	√
		Carshare	√
		Community-Based Travel Planning	√
	Transit Strategies	Transit Service Expansion	√
		Transit Frequency Improvements	√
		Transit-Supportive Treatments	√
		Transit Fare Reduction	√
		Microtransit NEV Shuttle	√
		Microtransit Commuter Shuttle	
	Transportation System Management	Adaptive Traffic Signal Systems	
		Smart Signals and Intersections	
		Optimized Signal Timing for Bicycles	
		Advanced Bicycle Detection	
		Real-Time Traveler Information	
		Active Traffic Management	
		Traffic Incident Management	
		Roadway Weather Management	

Source: SANDAG Mobility Management Strategy Guidebook, June 2019

11.0 LOCAL TRANSPORTATION STUDY AND LOCAL TRANSPORTATION ASSESSMENT GUIDELINES

The City of Oceanside utilizes the Institute of Transportation Engineers (ITE) San Diego Regional Guidelines (May 2019) to establish thresholds and methodology for a Local Transportation Study (LTS). A Local Transportation Study is different from VMT analysis for CEQA purposes and may be required in addition to the VMT analysis or individually. A Local Transportation Study will analyze the projects influence on the surrounding intersections and roadway network utilizing level of service (LOS) for all project scenarios. The purpose of the LTS is to help quantify the local impact of the development and expected changes in transportation conditions. The LTS should include roadway, bicycle, pedestrian, and transit evaluations. The following sections identify the project requirements for a Local Transportation Study. The Local Transportation Study helps the City ensure the goals, objectives, and policies adopted by the City are supported and implemented while monitoring the capacity for the roadway networks.

Data should be collected during typical operation hours. Data should be recent and no more than 2 years old for an LTS. **The acceptable level of service for the City of Oceanside that is consistent with the adopted Circulation Element is LOS D.**

Minimum Threshold for Local Transportation Study

Based on the recommendations of the Institute of Transportation Engineers (ITE) for the San Diego section, **Table 8** indicates when a Local Transportation Study is required for the City. This is based on keeping consistent with the thresholds previously used and *SANDAG's Not So Brief Guide (2002) Trip Generation*.

Projects Consistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that support these goals will adhere to the following LTS thresholds identified in Table 8.

Table 8 – Threshold for LTS for Projects Consistent with the Adopted General Plan

	LTS Analysis Not Needed	LTS Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 1,000 ADT	Greater than 1,000 ADT

(1) If ADT is equal to 1,000 ADT, an LTS is required.

A Local Transportation Study (LTS) will be required if a project exceeds 1,000 ADT and is consistent with the adopted General Plan.

Projects Inconsistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that are not in support of the General Plan have a lower LTS threshold and will require a General Plan Amendment. The following LTS analysis thresholds for projects that are inconsistent are identified in **Table 9**.

Table 9 – Threshold for LTS for Projects Inconsistent with the Adopted General Plan

	LTS Analysis Not Needed	LTS Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 500 ADT	Greater than 500 ADT

(1) If ADT is equal to 500 ADT, an LTS is required.

A Local Transportation Study (LTS) will be required if a project exceeds 500 ADT and is inconsistent with the adopted General Plan.

The thresholds identified in Table 7 and Table 8 stem from the professional expertise and judgement of the ITE San Diego section. These thresholds keep consistent with regional practice and will help ensure developments will not overburden the transportation network.

If a project would add peak hour trips to any existing on- or off-ramp it is recommended to consult with the City and Caltrans to determine if an LTS would be required.

Study Scenarios

The following scenarios are included in an LTS and may be modified in agreement with the City Traffic Engineer.

- Existing Conditions
- Existing Conditions Plus Project
- Existing Conditions Plus Near-Term Cumulative Projects
- Existing Conditions Plus Near-Term Cumulative Projects Plus Project
- Buildout Conditions (2030)
- Buildout Conditions Plus Project

Local Transportation Assessment (LTA)

A Local Transportation Assessment (LTA) may be required instead of a Local Transportation Study depending on the size of the project. A helps the City monitor development impacts on the transportation network and is similar to a Local Transportation Study(LTS). The main difference between the two studies is a Local Transportation Assessment (LTA) analyzes fewer scenarios than a Local Transportation Study (LTS). A Local Transportation Assessment (LTA) will be required if a project is less than 1,000 ADT but is anticipated to influence the surrounding environment.

A Local Transportation Assessment (LTA) will be required to analyze the following scenarios based on the thresholds for identified for the project's ADT.

- **A project that generates between 200-500 ADT will be required to analyze existing conditions and existing conditions plus project.**

- **A project that generates between 500-1,000 ADT will be required to analyze existing conditions, existing conditions plus project, existing conditions plus near-term cumulative projects, and existing conditions plus near-term cumulative projects plus project.**

Transportation Modes to be Included for Discussion in the LTS/LTA

Pedestrian:

- The LTS/LTA shall include pedestrian infrastructure available including any opportunities or deficiencies such as path obstructions or missing sidewalk for ½ mile walking distance from project pedestrian access points.
- All pedestrian facilities directly connected to project access points or adjacent to the project development, extending in each direction to the nearest intersection with a classified roadway or connection with a Class I path
- Facilities connecting to transit stops within two blocks of the project
- Only facilities on the side of the project or along the walking route to transit stop
- Additional geographic areas may be included in certain cases to address special cases such as schools or retail centers

Bicycle:

- The LTS/LTA shall include a discussion of bicycle infrastructure available including any opportunities or deficiencies such as bike lanes, bike buffers, or bike boxes. This section must also include discussion of what is planned based on City and regional documentation. The extents are as follows:
    - All roadways adjacent to the project, extending in each direction to the nearest intersection with a classified roadway or with a Class I path
    - Both directions of travel should be evaluated

Transit:

- The LTS/LTA shall identify any transit stops or routes existing and planned near the project site. This section shall also include a discussion and evaluation of transit stop amenities within ½ mile of each pedestrian access point.

Vehicle:

All signalized intersections and signalized project driveways shall be analyzed if:

- The project will add 50 or more peak hour (final cumulative) trips in either direction

All unsignalized intersections and unsignalized project driveways shall be analyzed if:

- The project will add 50 or more peak hour (final cumulative) trips in either direction

All freeway ramp intersections and signalized project driveways shall be analyzed if:

- The project will add 20 or more peak hour (final cumulative) trips in either direction

Intersection Level of Service analysis should be conducted using the Highway Capacity Manual (HCM) Methodology. For signalized intersections, the methodology described in the HCM for signalized intersections is used. With this methodology, the average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. The relationship between control delay per vehicle and LOS for signalized intersections is summarized in **Table 10**.

Table 10 – HCM Level of Service Description for Signalized Intersections

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	Insignificant delays: no approach phase is fully utilized and no vehicle waits longer than one red indication	< 10
B	Minimal delays: an occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 – 20
C	Acceptable delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 25 – 35
D	Tolerable delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 – 55
E	Significant delays: Volumes approaching capacity. Vehicles may wait through several cycles and long vehicle queues form upstream.	> 55 – 80
F	Excessive delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

Source: Highway Capacity Manual, Transportation Research Board, 2010.

For unsignalized intersections, the methodology described in the HCM for unsignalized intersections is used. With this methodology, LOS is related to the control delay for each stop-controlled movement. The relationship between control delay per vehicle and LOS for unsignalized intersections is summarized in **Table 11**.

Table 11 – HCM Level of Service Description for Unsignalized Intersections

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	No delay for stop-controlled approaches.	< 10
B	Operations with minor delay.	> 10 – 15
C	Operations with moderate delays.	> 15 – 25
D	Operations with some delays.	> 25 – 35
E	Operations with high delays and long queues.	> 35 – 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: Highway Capacity Manual, Transportation Research Board, 2010.

Table 12 provides guidance on the levels of ADT that can be accommodated on various types of roadways, based on level of service.

Table 12 – Circulation Element Roadway Classification LOS & Capacity

Class	Lanes	Cross Section (1)	Level of Service (LOS)				
			A	B	C	D	E
Expressway	6	102/160 122/200	30,000	42,000	60,000	70,000	80,000
Expressway	4	102/160 122/200	25,000	35,000	50,000	55,000	60,000
Prime Arterial	6	104/124	25,000	35,000	50,000	55,000	60,000
6-Lane Major Arterial	6	104/124	20,000	28,000	40,000	45,000	50,000
5-Lane Major Arterial (2)	5	102/122	17,500	24,500	35,000	40,000	45,000
4-Lane Major Arterial	4	80/100	15,000	21,000	30,000	35,000	40,000
Secondary Collector (4 lanes with 2-way left turn lane)	4	64/84	10,000	14,000	20,000	25,000	30,000
Secondary Collector (4 lanes without 2-way left-turn lane, with left turn pockets	4	54/74, 60/80	9,000	13,000	18,000	22,000	25,000
Collector (commercial fronting, 2-lanes with 2-way left turn lane) (3)	2	50/70	5,000	7,000	10,000	13,000	15,000
Collector (residential streets in the Circulation Element or industrial fronting)	2	40/60, 50/70	4,000	5,500	7,500	9,000	10,000
Local Street (residential streets NOT in the Circulation Element	1	36/56, 40/60	–	–	2,400	–	–

(1) Cross sections are listed as curd-to-curb width/total right of way width, in feet.
(2) Vandegrift Boulevard is the only Circulation Element roadway designated as a 5-lane Major Arterial. It is not intended that other roadways be build to 5-lane Major Arterial standards.
(3) This capacity will also be assumed for a two-lane one-way collector.

Table 13 indicates when a project's effect on the roadway system is considered to justify the need for roadway improvements. That is, if a project's traffic effect causes the values in this table to be exceeded, roadway improvements should be considered as follows on a case by case basis:

- Improvements should be consistent with the General Plan
- Improvements for transit, bike and pedestrian facilities should be given priority in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG.
- Projects in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG, that are consistent with the General Plan at the time of project application, should not be denied due to the inability to provide roadway improvements (i.e. existing right of way is constrained, etc.)

Table 13 – Determination of the Need for Roadway Improvements

Level of Service with Project*	Allowable Change Due to Project Effect**					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (MPH)	V/C	Speed (MPH)	Delay (Sec.)	Delay (Min.)
E & F (or ramp meter delays above 15 min)	0.01	1	0.02	1	2	2

12.0 TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

In general, the goal of City Staff is to help Oceanside increase connectivity and level of comfort for pedestrians, bicyclists, and transit users. Project improvements may come from the City's adopted General Plan or other City policies that help improve the overall quality of life for the community. **Table 14** identifies some TDM improvement measures that may be considered for a project.

Table 14 – Potential TDM Improvement Measures

Potential TDM Measures	
Transit Facilities	Telecommuting
Bike Facilities	Rideshare Programs
Walkability	Flex-time
Carpool Incentives	Parking Cash-Out
Subsidized Transit Passes	Shuttle Service

A measure that is not listed may be considered if the mitigation is appropriately applied and reasonable. Additional improvement measures may be identified as future technologies and policies evolve or with consultation by City Staff.

Appendix D

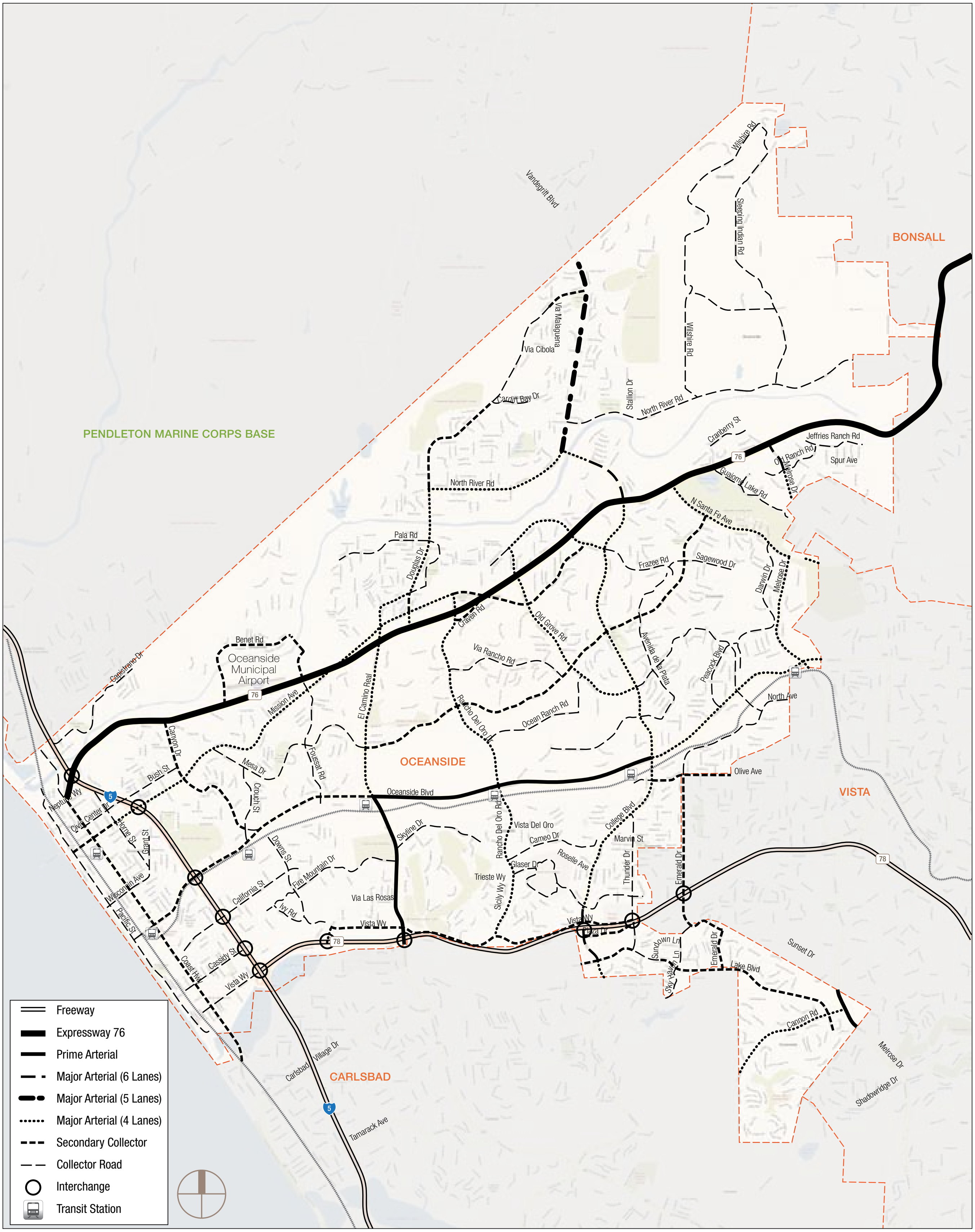
Excerpts from the *Oceanside General Plan Circulation Element*, Sept 2012

OCEANSIDE GENERAL PLAN
CIRCULATION ELEMENT UPDATE
City of Oceanside, California

Prepared for
City of Oceanside
Transportation Engineering Division
300 North Coast Highway
Oceanside, CA 92054

Prepared by
IBI GROUP
701 B Street, Suite 1810
San Diego, CA 92101

September 2012



Not to Scale

Existing Roadway Classifications

Figure 3.1

Appendix E

Count Data and Signal Timing Sheets

Counts Unlimited
PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: SR-76

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	80	0	130	57	231	0	0	481	56	1035
7:15 AM	0	0	0	68	0	111	54	217	0	0	519	61	1030
7:30 AM	0	0	0	50	0	137	66	217	0	0	393	39	902
7:45 AM	0	0	0	49	0	112	62	205	0	0	368	49	845
8:00 AM	0	0	0	62	0	120	37	206	0	0	418	35	878
8:15 AM	0	0	0	60	0	150	60	213	0	0	399	39	921
8:30 AM	0	0	0	35	0	138	57	187	0	0	394	57	868
8:45 AM	0	0	0	70	0	91	41	179	0	0	367	47	795
TOTAL VOLUMES:	0	0	0	474	0	989	434	1655	0	0	3339	383	7274

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	247	0	490	239	870	0	0	1761	205	3812

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.000	0.877	0.963	0.847	0.921

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	SR-76 East Leg	SR-76 West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	1

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	0	1	1

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: SR-76

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:15 PM to 5:15 PM**

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	63	0	71	121	410	0	0	234	61	960
4:15 PM	0	0	0	73	0	86	155	411	0	0	278	57	1060
4:30 PM	0	0	0	54	0	84	102	428	0	0	281	67	1016
4:45 PM	0	0	0	83	0	87	114	402	0	0	222	63	971
5:00 PM	0	0	0	77	0	89	131	376	0	0	253	65	991
5:15 PM	0	0	0	79	0	83	110	396	0	0	263	67	998
5:30 PM	0	0	0	62	0	97	124	439	0	0	245	71	1038
5:45 PM	0	0	0	72	0	89	92	369	0	0	304	73	999
TOTAL VOLUMES:	0	0	0	563	0	686	949	3231	0	0	2080	524	8033

PM Peak Hr Begins at: 415 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	287	0	346	502	1617	0	0	1034	252	4038

PEAK HR FACTOR:	0.000	0.931	0.936	0.924	0.952

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	1	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	1	0	0	0	0	1

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	SR-76 East Leg	SR-76 West Leg	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1
4:30 PM	0	0	2	0	2
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	3	0	3

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	3	0	3

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: Mission Avenue

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Mission Avenue Eastbound			Mission Avenue Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	26	69	1	135	191	14	14	77	17	11	93	94	742
7:15 AM	36	79	1	108	175	22	17	54	9	13	111	82	707
7:30 AM	23	72	3	60	150	13	20	56	14	14	128	87	640
7:45 AM	26	71	4	75	160	22	15	71	22	9	98	55	628
8:00 AM	25	50	4	92	175	13	19	85	22	15	102	63	665
8:15 AM	28	56	5	49	156	18	19	54	16	18	106	60	585
8:30 AM	40	61	1	53	152	12	12	51	18	16	73	38	527
8:45 AM	28	44	5	71	163	21	7	64	19	9	76	43	550
TOTAL VOLUMES:	232	502	24	643	1322	135	123	512	137	105	787	522	5044

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	111	291	9	378	676	71	66	258	62	47	430	318	2717

PEAK HR FACTOR:	0.886	0.827	0.894	0.868	0.915

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Mission Avenue Eastbound			Mission Avenue Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	1	1	0	1	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	1	0	1	0	2

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Mission Avenue East Leg	Mission Avenue West Leg	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	1	1	1	2	5
7:30 AM	0	1	3	1	5
7:45 AM	1	3	2	1	7
8:00 AM	0	1	0	0	1
8:15 AM	0	1	1	1	3
8:30 AM	0	1	0	6	7
8:45 AM	2	2	0	2	6
TOTAL VOLUMES:	4	10	7	14	35

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	5	6	5	18

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: Mission Avenue

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Mission Avenue Eastbound			Mission Avenue Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	35	143	7	55	117	17	58	148	36	13	71	72	772
4:15 PM	44	127	10	52	89	9	62	154	40	21	88	76	772
4:30 PM	42	134	2	58	118	17	47	134	34	17	71	84	758
4:45 PM	43	125	2	82	112	12	54	138	33	12	84	95	792
5:00 PM	39	144	4	81	111	13	68	168	43	16	88	103	878
5:15 PM	41	151	6	71	129	10	58	152	24	15	82	91	830
5:30 PM	44	117	9	69	112	10	44	145	39	16	70	86	761
5:45 PM	41	143	4	71	117	13	57	144	42	13	92	81	818
TOTAL VOLUMES:	329	1084	44	539	905	101	448	1183	291	123	646	688	6381

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	165	555	23	292	469	46	227	609	148	60	332	361	3287

PEAK HR FACTOR:	0.938	0.961	0.882	0.909	0.936

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Mission Avenue Eastbound			Mission Avenue Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	2	0	0	2	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	1	0	0	2	0	3

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Mission Avenue East Leg	Mission Avenue West Leg	TOTAL
4:00 PM	1	2	3	2	8
4:15 PM	2	1	4	1	8
4:30 PM	1	3	4	0	8
4:45 PM	4	1	4	1	10
5:00 PM	1	2	4	3	10
5:15 PM	0	3	2	3	8
5:30 PM	1	8	5	9	23
5:45 PM	1	4	1	3	9
TOTAL VOLUMES:	11	24	27	22	84

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	3	17	12	18	50

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: El Camino Real

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			El Camino Real Eastbound			El Camino Real Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	11	115	6	2	327	254	48	4	13	20	8	0	808
7:15 AM	10	157	9	2	295	285	67	3	11	21	10	0	870
7:30 AM	14	162	14	0	182	290	95	4	8	18	8	0	795
7:45 AM	5	115	7	4	238	256	111	6	4	10	7	1	764
8:00 AM	13	124	11	3	224	256	55	5	16	14	10	0	731
8:15 AM	15	122	10	0	226	224	77	5	8	9	8	0	704
8:30 AM	7	103	11	3	182	201	62	5	8	12	9	1	604
8:45 AM	4	87	5	1	180	200	79	8	13	13	15	2	607
TOTAL VOLUMES:	79	985	73	15	1854	1966	594	40	81	117	75	4	5883

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	40	549	36	8	1042	1085	321	17	36	69	33	1	3237

PEAK HR FACTOR:	0.822	0.916	0.773	0.831	0.930

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			El Camino Real Eastbound			El Camino Real Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	1	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	1	0	0	1	0	0	0	2

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	El Camino Real East Leg	El Camino Real West Leg	TOTAL
7:00 AM	0	1	1	2	4
7:15 AM	0	0	0	2	2
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	1	1
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	2	2
TOTAL VOLUMES:	0	1	2	8	11

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	1	1	6	8

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: El Camino Real

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			El Camino Real Eastbound			El Camino Real Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	20	199	16	1	139	165	266	10	10	14	4	0	844
4:15 PM	27	239	8	1	139	145	181	11	12	10	9	0	782
4:30 PM	20	213	12	2	118	160	249	18	11	14	6	0	823
4:45 PM	26	237	12	2	172	156	212	13	15	8	3	2	858
5:00 PM	19	215	15	0	167	145	235	14	11	13	6	4	844
5:15 PM	17	266	14	1	195	157	264	11	9	17	3	1	955
5:30 PM	20	241	19	2	150	152	238	20	14	6	6	2	870
5:45 PM	23	233	15	4	163	150	242	18	21	17	10	3	899
TOTAL VOLUMES:	172	1843	111	13	1243	1230	1887	115	103	99	47	12	6875

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	79	955	63	7	675	604	979	63	55	53	25	10	3568

PEAK HR FACTOR:	0.923	0.911	0.966	0.733	0.934

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			El Camino Real Eastbound			El Camino Real Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1	0	0	1	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	1	0	0	0	0	1

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	El Camino Real East Leg	El Camino Real West Leg	TOTAL
4:00 PM	0	3	1	4	8
4:15 PM	0	2	0	2	4
4:30 PM	0	0	0	1	1
4:45 PM	0	0	2	1	3
5:00 PM	0	0	0	2	2
5:15 PM	0	1	0	1	2
5:30 PM	0	2	2	5	9
5:45 PM	0	0	0	2	2
TOTAL VOLUMES:	0	8	5	18	31

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	3	2	10	15

PO Box 1178
Corona, CA 92880
951-268-6268

Location:	Oceanside		Date: 9/20/18
N/S:	Douglas Drive		Day: THURSDAY
E/W:	Pala Road		Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:00AM to 8:00 AM**

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Pala Road Eastbound			Pala Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	9	174	2	6	539	19	20	1	35	3	2	4	814
7:15 AM	7	244	4	3	470	21	16	1	13	0	0	5	784
7:30 AM	13	239	6	1	406	15	15	0	23	5	0	8	731
7:45 AM	8	188	4	5	460	12	15	1	21	1	0	7	722
8:00 AM	16	152	1	3	466	20	26	1	26	2	2	4	719
8:15 AM	35	147	3	7	343	25	12	2	27	2	1	2	606
8:30 AM	32	125	3	5	349	50	41	2	49	6	4	9	675
8:45 AM	27	131	4	7	304	52	37	2	70	7	6	4	651
TOTAL VOLUMES:	147	1400	27	37	3337	214	182	10	264	26	15	43	5702

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	37	845	16	15	1875	67	66	3	92	9	2	24	3051

PEAK HR FACTOR:	0.870	0.867	0.719	0.673	0.937

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Pala Road Eastbound			Pala Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	1	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	1	0	1	0	0	0	1	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	1	0	1	0	0	0	0	2

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Pala Road East Leg	Pala Road West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	3	3	0	6
7:30 AM	0	0	0	1	1
7:45 AM	0	0	1	0	1
8:00 AM	0	1	3	1	5
8:15 AM	0	3	0	0	3
8:30 AM	0	0	0	2	2
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	7	7	4	18

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	3	4	1	8

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: Pala Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Pala Road Eastbound			Pala Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	23	399	5	1	242	20	22	0	35	6	1	8	762
4:15 PM	26	408	7	4	279	14	21	0	16	5	1	4	785
4:30 PM	23	413	2	4	271	21	25	0	21	1	0	9	790
4:45 PM	20	407	8	7	304	25	16	1	28	4	0	12	832
5:00 PM	35	466	0	4	298	22	20	0	19	2	1	4	871
5:15 PM	20	434	6	5	279	28	37	0	20	0	1	4	834
5:30 PM	15	442	3	5	308	25	21	0	22	1	1	4	847
5:45 PM	30	448	3	7	261	24	24	1	17	2	0	8	825
TOTAL VOLUMES:	192	3417	34	37	2242	179	186	2	178	21	5	53	6546

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	90	1749	17	21	1189	100	94	1	89	7	3	24	3384

PEAK HR FACTOR:	0.926	0.969	0.807	0.531	0.971

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Pala Road Eastbound			Pala Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL VOLUMES:	0	0	0	1	1	1	0	0	0	0	0	2	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	1	1	0	0	0	0	0	0	1	3

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Pala Road East Leg	Pala Road West Leg	TOTAL
4:00 PM	0	1	0	4	5
4:15 PM	0	0	0	0	0
4:30 PM	0	1	2	2	5
4:45 PM	0	2	2	2	6
5:00 PM	0	0	2	0	2
5:15 PM	0	3	0	0	3
5:30 PM	0	4	0	3	7
5:45 PM	0	4	2	2	8
TOTAL VOLUMES:	0	15	8	13	36

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	9	4	5	18

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: Rainier Way

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Rainier Way Eastbound			Rainier Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	227	10	0	505	9	5	0	42	28	2	1	829
7:15 AM	0	270	8	1	433	9	1	0	21	13	2	3	761
7:30 AM	0	254	7	0	409	15	3	0	29	13	0	1	731
7:45 AM	0	174	6	1	440	4	6	2	17	13	0	1	664
8:00 AM	0	183	7	0	424	4	2	0	25	11	1	4	661
8:15 AM	0	190	3	2	330	11	3	0	21	16	2	3	581
8:30 AM	0	167	5	1	355	5	4	1	28	15	0	1	582
8:45 AM	1	178	4	1	290	14	2	0	27	9	0	2	528
TOTAL VOLUMES:	1	1643	50	6	3186	71	26	3	210	118	7	16	5337

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	925	31	2	1787	37	15	2	109	67	4	6	2985

PEAK HR FACTOR:	0.860	0.888	0.670	0.621	0.900

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Rainier Way Eastbound			Rainier Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	3	0	0	0	0	1	0	0	4
8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	2	0	0	0	0	0	0	1	2	0	0	5
TOTAL VOLUMES:	0	5	0	0	6	1	0	0	4	3	0	0	19

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	5	0	0	0	3	1	0	0	9

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Rainier Way East Leg	Rainier Way West Leg	TOTAL
7:00 AM	0	1	1	0	2
7:15 AM	1	0	0	1	2
7:30 AM	0	1	0	1	2
7:45 AM	1	0	1	1	3
8:00 AM	2	0	0	0	2
8:15 AM	2	0	1	0	3
8:30 AM	2	0	0	0	2
8:45 AM	1	0	0	1	2
TOTAL VOLUMES:	9	2	3	4	18

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	2	2	3	9

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: Rainier Way

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Rainier Way Eastbound			Rainier Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	409	10	1	254	26	3	0	11	7	0	2	723
4:15 PM	0	418	24	2	300	18	1	0	17	5	0	0	785
4:30 PM	0	410	13	3	286	15	2	0	9	7	0	5	750
4:45 PM	0	424	25	2	304	15	3	0	18	12	0	1	804
5:00 PM	0	398	21	1	268	21	1	0	13	9	0	1	733
5:15 PM	0	434	14	0	292	17	3	2	23	16	1	0	802
5:30 PM	0	427	20	1	271	20	1	0	19	4	1	2	766
5:45 PM	0	447	13	3	273	29	5	1	17	13	1	1	803
TOTAL VOLUMES:	0	3367	140	13	2248	161	19	3	127	73	3	12	6166

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1683	80	4	1135	73	8	2	73	41	2	4	3105

PEAK HR FACTOR:	0.982	0.944	0.741	0.691	0.965

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			Rainier Way Eastbound			Rainier Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	1	0	0	1	0	0	0	0	1	0	0	3
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	3
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
TOTAL VOLUMES:	1	6	1	0	6	0	0	0	0	1	0	0	15

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	1	3	1	0	2	0	0	0	0	0	0	0	7

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	Rainier Way East Leg	Rainier Way West Leg	TOTAL
4:00 PM	0	0	0	3	3
4:15 PM	0	1	0	2	3
4:30 PM	1	0	0	2	3
4:45 PM	0	0	1	0	1
5:00 PM	1	1	0	2	4
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	1	1
TOTAL VOLUMES:	2	2	2	10	16

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	1	1	2	2	6

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			River Road Eastbound			River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	12	101	78	5	231	2	12	23	58	216	17	1	756
7:15 AM	19	110	75	6	177	4	16	28	39	231	10	2	717
7:30 AM	26	107	102	2	130	2	10	22	40	216	8	6	671
7:45 AM	14	113	94	5	165	1	15	21	49	219	12	12	720
8:00 AM	13	99	54	9	192	4	10	17	29	204	9	9	649
8:15 AM	15	69	76	21	137	10	5	16	32	200	5	2	588
8:30 AM	15	64	68	7	152	1	11	12	40	136	5	5	516
8:45 AM	26	53	83	4	151	0	5	17	39	174	5	6	563
TOTAL VOLUMES:	140	716	630	59	1335	24	84	156	326	1596	71	43	5180

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	71	431	349	18	703	9	53	94	186	882	47	21	2864

PEAK HR FACTOR:	0.905	0.767	0.895	0.977	0.947

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			River Road Eastbound			River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	3	0	0	0	0	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	2	0	0	0	0	0	0	0	2

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	River Road East Leg	River Road West Leg	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	0	0
7:30 AM	1	0	1	0	2
7:45 AM	0	1	0	0	1
8:00 AM	0	1	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	1	3	1	0	5
8:45 AM	0	2	1	0	3
TOTAL VOLUMES:	2	7	3	1	13

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	1	1	1	1	4

Counts unlimited
PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Douglas Drive
E/W: River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Vehicle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			River Road Eastbound			River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	24	149	191	4	114	12	11	45	26	112	12	7	707
4:15 PM	25	156	199	6	121	9	12	26	18	111	14	5	702
4:30 PM	29	160	188	0	125	11	8	21	17	138	20	4	721
4:45 PM	43	141	179	11	151	9	6	21	16	118	13	6	714
5:00 PM	37	148	188	14	128	11	11	19	12	143	15	12	738
5:15 PM	34	188	218	11	172	12	10	26	22	129	20	9	851
5:30 PM	50	155	204	7	123	12	7	23	16	122	9	11	739
5:45 PM	25	176	173	7	148	11	10	26	17	126	20	8	747
TOTAL VOLUMES:	267	1273	1540	60	1082	87	75	207	144	999	123	62	5919

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	146	667	783	39	571	46	38	94	67	520	64	40	3075

PEAK HR FACTOR:	0.907	0.841	0.858	0.918	0.903

Bicycle Counts

	Douglas Drive Northbound			Douglas Drive Southbound			River Road Eastbound			River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	1	0	0	0	2
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	0	0	0	4	0	0	0	1	0	0	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	3	0	0	0	1	0	0	0	4

Pedestrian Counts

	Douglas Drive North Leg	Douglas Drive South Leg	River Road East Leg	River Road West Leg	TOTAL
4:00 PM	1	4	2	2	9
4:15 PM	0	8	2	1	11
4:30 PM	1	7	1	0	9
4:45 PM	1	10	3	1	15
5:00 PM	0	3	0	0	3
5:15 PM	0	0	0	1	1
5:30 PM	4	4	0	3	11
5:45 PM	2	6	2	3	13
TOTAL VOLUMES:	9	42	10	11	72

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	6	13	2	7	28

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Ave Descanso
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Ave Descanso Northbound			Ave Descanso Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	4	39	11	35	10	86	0	6	180	6	377
7:15 AM	1	1	8	29	1	28	14	104	1	2	180	12	381
7:30 AM	0	0	12	20	0	26	18	112	1	4	213	13	419
7:45 AM	1	1	6	23	0	15	9	118	3	6	212	13	407
8:00 AM	0	3	5	14	0	26	5	91	3	4	196	11	358
8:15 AM	0	1	4	15	1	22	9	107	1	2	154	11	327
8:30 AM	0	0	9	18	1	24	4	96	0	9	152	8	321
8:45 AM	0	0	7	8	2	28	4	96	2	10	143	4	304
TOTAL VOLUMES:	2	6	55	166	16	204	73	810	11	43	1430	78	2894

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	2	2	30	111	12	104	51	420	5	18	785	44	1584

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.708	0.668	0.908	0.917	0.945

Bicycle Counts

	Ave Descanso Northbound			Ave Descanso Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	1	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Ave Descanso North Leg	Ave Descanso South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	0	0	3	0	3
7:15 AM	0	0	1	1	2
7:30 AM	2	2	0	1	5
7:45 AM	1	1	0	2	4
8:00 AM	0	0	2	0	2
8:15 AM	1	0	0	0	1
8:30 AM	0	0	5	0	5
8:45 AM	0	2	0	2	4
TOTAL VOLUMES:	4	5	11	6	26

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	3	3	4	4	14

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Ave Descanso
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Vehicle Counts

	Ave Descanso Northbound			Ave Descanso Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	1	2	2	12	1	7	27	228	3	12	119	17	431
4:15 PM	0	2	10	14	0	10	22	172	0	3	165	24	422
4:30 PM	0	1	5	13	1	16	35	208	1	4	132	20	436
4:45 PM	2	3	6	15	2	17	14	181	4	3	135	22	404
5:00 PM	0	3	11	17	0	18	29	175	2	4	161	26	446
5:15 PM	0	1	5	17	1	21	33	225	6	6	123	25	463
5:30 PM	2	0	12	27	2	17	31	182	1	7	148	21	450
5:45 PM	0	0	6	20	1	15	20	213	3	8	133	13	432
TOTAL VOLUMES:	5	12	57	135	8	121	211	1584	20	47	1116	168	3484

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	2	4	34	81	4	71	113	795	12	25	565	85	1791

PEAK HR FACTOR:	0.714	0.848	0.871	0.884	0.967

Bicycle Counts

	Ave Descanso Northbound			Ave Descanso Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	2	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	2	0	0	0	0	2

Pedestrian Counts

	Ave Descanso North Leg	Ave Descanso South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	1	1	0	1	3
4:15 PM	2	1	0	0	3
4:30 PM	2	4	0	1	7
4:45 PM	1	0	1	0	2
5:00 PM	3	2	6	2	13
5:15 PM	3	0	0	0	3
5:30 PM	1	1	4	1	7
5:45 PM	6	1	0	3	10
TOTAL VOLUMES:	19	10	11	8	48

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	13	4	10	6	33

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Westwinds
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:15 AM to 8:15 AM**

Vehicle Counts

	Westwinds Northbound			Westwinds Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	2	0	7	2	125	0	0	194	3	333
7:15 AM	0	0	0	4	0	9	1	138	0	0	196	1	349
7:30 AM	0	0	0	0	0	3	8	138	0	0	240	3	392
7:45 AM	0	0	0	3	0	9	2	133	0	0	223	1	371
8:00 AM	0	0	0	2	0	5	1	138	0	0	194	2	342
8:15 AM	0	0	0	3	0	3	1	97	0	0	151	3	258
8:30 AM	0	0	0	0	0	4	1	133	0	0	167	1	306
8:45 AM	0	0	0	3	0	3	0	101	0	0	172	1	280
TOTAL VOLUMES:	0	0	0	17	0	43	16	1003	0	0	1537	15	2631

AM Peak Hr Begins at: 715 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	9	0	26	12	547	0	0	853	7	1454

PEAK HR FACTOR:	0.000	0.673	0.957	0.885	0.927

Bicycle Counts

	Westwinds Northbound			Westwinds Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	0	1

Pedestrian Counts

	Westwinds North Leg	Westwinds South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	1	0	0	0	1
7:15 AM	2	0	0	0	2
7:30 AM	3	0	0	0	3
7:45 AM	0	0	0	0	0
8:00 AM	4	0	0	0	4
8:15 AM	1	0	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	11	0	0	0	11

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	9	0	0	0	9

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Westwinds
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **5:00 PM to 6:00 PM**

Vehicle Counts

	Westwinds Northbound			Westwinds Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	1	0	3	6	211	0	0	159	3	383
4:15 PM	0	0	0	2	0	3	9	202	0	0	178	6	400
4:30 PM	0	0	0	1	0	2	9	206	0	0	150	2	370
4:45 PM	0	0	0	6	0	7	5	191	0	0	163	1	373
5:00 PM	0	0	0	0	0	3	5	228	0	0	183	6	425
5:15 PM	0	0	0	1	0	3	5	220	0	0	165	1	395
5:30 PM	0	0	0	2	0	1	5	243	0	0	150	7	408
5:45 PM	0	0	0	0	0	6	6	211	0	0	158	1	382
TOTAL VOLUMES:	0	0	0	13	0	28	50	1712	0	0	1306	27	3136

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	3	0	13	21	902	0	0	656	15	1610

PEAK HR FACTOR:	0.000	0.667	0.930	0.888	0.947

Bicycle Counts

	Westwinds Northbound			Westwinds Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	1	2	0	0	2	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	1	0	0	0	2	0	3

Pedestrian Counts

	Westwinds North Leg	Westwinds South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	3	0	0	0	3
4:15 PM	0	0	0	0	0
4:30 PM	3	0	1	0	4
4:45 PM	1	0	0	0	1
5:00 PM	1	0	0	0	1
5:15 PM	2	0	0	0	2
5:30 PM	2	0	0	0	2
5:45 PM	7	0	0	0	7
TOTAL VOLUMES:	19	0	1	0	20

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	12	0	0	0	12

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Riverview Way
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:15 AM to 8:15 AM**

Vehicle Counts

	Riverview Way Northbound			Riverview Way Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	10	0	12	1	125	0	0	181	2	331
7:15 AM	0	0	0	3	0	4	1	142	0	0	202	3	355
7:30 AM	0	0	0	8	0	10	2	138	0	0	227	0	385
7:45 AM	0	0	0	2	0	14	6	129	0	0	206	1	358
8:00 AM	0	0	0	2	0	12	13	128	0	0	183	1	339
8:15 AM	0	0	0	2	0	3	4	96	0	0	150	0	255
8:30 AM	0	0	0	4	0	5	1	132	0	0	163	0	305
8:45 AM	0	0	0	0	0	0	4	100	0	0	175	3	282
TOTAL VOLUMES:	0	0	0	31	0	60	32	990	0	0	1487	10	2610

AM Peak Hr Begins at: 715 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	15	0	40	22	537	0	0	818	5	1437

PEAK HR FACTOR:	0.000	0.764	0.977	0.906	0.933

Bicycle Counts

	Riverview Way Northbound			Riverview Way Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	2	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	2	0	0	0	0	2

Pedestrian Counts

	Riverview Way North Leg	Riverview Way South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	0	0	0

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Riverview Way
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **5:00 PM to 6:00 PM**

Vehicle Counts

	Riverview Way Northbound			Riverview Way Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	2	0	8	3	211	0	0	157	2	383
4:15 PM	0	0	0	2	0	3	6	197	0	0	181	6	395
4:30 PM	0	0	0	1	0	1	7	202	0	0	145	3	359
4:45 PM	0	0	0	4	0	4	4	195	0	0	165	3	375
5:00 PM	0	0	0	3	0	2	6	220	0	0	180	3	414
5:15 PM	0	0	0	6	0	4	7	209	0	0	165	4	395
5:30 PM	0	0	0	2	0	2	8	234	0	0	164	2	412
5:45 PM	0	0	0	8	0	0	4	210	0	0	151	3	376
TOTAL VOLUMES:	0	0	0	28	0	24	45	1678	0	0	1308	26	3109

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	19	0	8	25	873	0	0	660	12	1597

PEAK HR FACTOR:	0.000	0.675	0.928	0.918	0.964

Bicycle Counts

	Riverview Way Northbound			Riverview Way Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	2	1	4	0	0	0	2	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	2	0	0	0	0	0	1	3

Pedestrian Counts

	Riverview Way North Leg	Riverview Way South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1
4:30 PM	1	0	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	2	0	0	0	2
TOTAL VOLUMES:	4	0	0	0	4

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	0	0	0	2

Counts unlimited
PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Calle Montecito
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Calle Montecito Northbound			Calle Montecito Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	2	0	2	81	1	34	10	125	2	8	135	19	419
7:15 AM	3	0	3	46	0	23	21	119	6	8	163	22	414
7:30 AM	4	0	2	34	0	26	12	129	8	11	192	34	452
7:45 AM	2	1	1	35	0	22	6	113	11	5	179	23	398
8:00 AM	2	0	2	36	0	25	9	111	1	8	160	19	373
8:15 AM	4	0	1	38	0	12	11	91	7	10	137	19	330
8:30 AM	0	0	4	50	0	20	10	117	6	14	146	25	392
8:45 AM	5	0	6	36	1	22	9	86	8	8	143	40	364
TOTAL VOLUMES:	22	1	21	356	2	184	88	891	49	72	1255	201	3142

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	11	1	8	196	1	105	49	486	27	32	669	98	1683

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.833	0.651	0.943	0.843	0.931

Bicycle Counts

	Calle Montecito Northbound			Calle Montecito Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Calle Montecito North Leg	Calle Montecito South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	0	1	3	0	4
7:15 AM	0	1	0	0	1
7:30 AM	0	1	1	0	2
7:45 AM	2	0	0	0	2
8:00 AM	3	2	1	1	7
8:15 AM	2	1	1	1	5
8:30 AM	0	3	0	1	4
8:45 AM	0	2	0	0	2
TOTAL VOLUMES:	7	11	6	3	27

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	3	4	0	9

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Calle Montecito
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Calle Montecito Northbound			Calle Montecito Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	7	0	9	29	0	10	30	184	4	2	140	42	457
4:15 PM	5	1	4	28	0	26	20	174	7	3	164	51	483
4:30 PM	5	0	11	33	0	15	36	157	3	5	129	41	435
4:45 PM	3	1	5	42	0	10	31	173	2	2	146	51	466
5:00 PM	10	1	12	37	0	13	22	189	1	1	156	46	488
5:15 PM	3	0	8	23	0	18	38	170	2	2	145	42	451
5:30 PM	7	0	7	33	1	18	35	189	5	3	137	44	479
5:45 PM	2	2	6	23	0	22	28	181	3	1	133	41	442
TOTAL VOLUMES:	42	5	62	248	1	132	240	1417	27	19	1150	358	3701

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	23	2	32	135	1	59	126	721	10	8	584	183	1884

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.620	0.938	0.936	0.954	0.965

Bicycle Counts

	Calle Montecito Northbound			Calle Montecito Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	1	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	1	0	1

Pedestrian Counts

	Calle Montecito North Leg	Calle Montecito South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	2	1	0	1	4
4:15 PM	0	1	0	0	1
4:30 PM	3	0	6	2	11
4:45 PM	1	0	0	1	2
5:00 PM	0	2	0	2	4
5:15 PM	2	0	1	0	3
5:30 PM	0	0	2	2	4
5:45 PM	1	2	6	2	11
TOTAL VOLUMES:	9	6	15	10	40

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	3	2	3	5	13

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Redondo Drive
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:00AM to 8:00 AM**

Vehicle Counts

	Redondo Drive Northbound			Redondo Drive Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	40	0	32	8	216	0	0	146	8	450
7:15 AM	1	0	1	21	0	23	4	173	0	0	187	16	426
7:30 AM	0	0	0	10	0	31	8	149	0	0	215	18	431
7:45 AM	0	0	0	12	0	26	13	137	0	0	204	10	402
8:00 AM	0	0	0	14	0	15	14	134	0	0	168	14	359
8:15 AM	0	0	1	18	0	20	28	113	0	0	138	22	340
8:30 AM	0	0	0	28	0	46	44	140	0	0	125	21	404
8:45 AM	0	0	0	28	0	64	35	96	0	0	133	8	364
TOTAL VOLUMES:	1	0	2	171	0	257	154	1158	0	0	1316	117	3176

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	1	0	1	83	0	112	33	675	0	0	752	52	1709

PEAK HR FACTOR:	0.250	0.677	0.790	0.863	0.949

Bicycle Counts

	Redondo Drive Northbound			Redondo Drive Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	1	0	0	0	0	0	0	0	0	1

Pedestrian Counts

	Redondo Drive North Leg	Redondo Drive South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	1	0	5	0	6
7:15 AM	1	1	1	0	3
7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0
8:00 AM	1	3	2	0	6
8:15 AM	0	2	2	0	4
8:30 AM	0	3	5	0	8
8:45 AM	0	2	4	0	6
TOTAL VOLUMES:	3	11	20	0	34

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	1	7	0	10

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Redondo Drive
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Redondo Drive Northbound			Redondo Drive Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	17	0	17	25	201	0	0	165	17	442
4:15 PM	0	0	0	15	0	20	11	192	0	0	186	10	434
4:30 PM	0	0	0	11	0	15	18	190	0	0	165	11	410
4:45 PM	0	0	0	12	0	21	24	200	0	0	177	13	447
5:00 PM	0	0	0	4	0	22	31	216	0	0	188	14	475
5:15 PM	0	0	0	17	0	12	24	187	0	0	174	21	435
5:30 PM	0	0	0	16	0	24	24	193	0	0	171	14	442
5:45 PM	0	0	1	11	0	13	33	192	0	0	159	21	430
TOTAL VOLUMES:	0	0	1	103	0	144	190	1571	0	0	1385	121	3515

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	49	0	79	103	796	0	0	710	62	1799

PEAK HR FACTOR:	0.000	0.800	0.910	0.955	0.947

Bicycle Counts

	Redondo Drive Northbound			Redondo Drive Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	2	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	1	2

Pedestrian Counts

	Redondo Drive North Leg	Redondo Drive South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	2	0	0	0	2
4:15 PM	2	0	3	0	5
4:30 PM	1	1	6	0	8
4:45 PM	1	0	3	0	4
5:00 PM	1	0	2	0	3
5:15 PM	1	0	1	0	2
5:30 PM	1	1	2	0	4
5:45 PM	1	2	1	0	4
TOTAL VOLUMES:	10	4	18	0	32

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	4	1	8	0	13

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	63	4	242	8	20	0	4	53	210	259	93	21	977
7:15 AM	84	5	300	2	13	2	6	50	140	254	118	15	989
7:30 AM	86	6	217	5	11	5	1	63	103	201	133	16	847
7:45 AM	71	6	174	10	5	2	3	46	94	235	135	18	799
8:00 AM	68	3	144	6	6	2	2	57	89	202	108	15	702
8:15 AM	71	5	152	5	8	4	9	49	84	155	87	12	641
8:30 AM	75	4	132	8	7	1	7	50	108	193	74	9	668
8:45 AM	55	2	137	4	5	1	1	48	79	159	83	4	578
TOTAL VOLUMES:	573	35	1498	48	75	17	33	416	907	1658	831	110	6201

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	304	21	933	25	49	9	14	212	547	949	479	70	3612

PEAK HR FACTOR:	0.808	0.741	0.724	0.965	0.913

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	10	1	0	10	21
7:15 AM	5	0	0	2	7
7:30 AM	1	1	0	1	3
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	0	1
8:30 AM	2	1	0	0	3
8:45 AM	0	1	0	0	1
TOTAL VOLUMES:	18	5	0	13	36

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	16	2	0	13	31

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: N. River Road

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	87	7	207	8	6	0	5	104	118	202	101	10	855
4:15 PM	103	5	229	7	13	0	3	97	111	251	98	6	923
4:30 PM	97	5	238	9	4	0	6	93	95	238	78	12	875
4:45 PM	100	8	215	8	10	0	6	87	108	267	95	12	916
5:00 PM	97	11	247	7	14	0	3	104	114	234	93	16	940
5:15 PM	107	5	276	7	11	2	6	111	113	212	92	17	959
5:30 PM	89	6	249	1	4	0	8	90	110	242	84	13	896
5:45 PM	88	14	239	13	11	1	14	97	97	209	79	14	876
TOTAL VOLUMES:	768	61	1900	60	73	3	51	783	866	1855	720	100	7240

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	393	30	987	23	39	2	23	392	445	955	364	58	3711

PEAK HR FACTOR:	0.909	0.762	0.935	0.920	0.967

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	0	0	0	0	1	1	4
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL VOLUMES:	0	0	4	0	1	0	0	0	0	0	1	2	8

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	4	0	0	0	0	0	0	0	1	1	6

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	0	0	0	1	1
4:15 PM	0	1	0	1	2
4:30 PM	0	3	0	1	4
4:45 PM	0	1	0	0	1
5:00 PM	2	1	0	1	4
5:15 PM	3	0	0	3	6
5:30 PM	4	2	0	5	11
5:45 PM	0	2	0	1	3
TOTAL VOLUMES:	9	10	0	13	32

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	9	4	0	9	22

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: Buchanon Park Access

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:00AM to 8:00 AM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Buchanon Park Access Eastbound			Buchanon Park Access Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	7	286	0	0	438	45	20	0	13	0	0	0	809
7:15 AM	10	360	0	0	382	21	26	0	12	0	0	0	811
7:30 AM	3	308	0	0	306	5	1	0	0	0	0	0	623
7:45 AM	6	253	0	0	330	3	3	0	2	0	0	0	597
8:00 AM	3	189	0	0	299	2	9	0	3	0	0	0	505
8:15 AM	4	217	0	0	241	1	3	0	1	0	0	0	467
8:30 AM	7	205	0	0	301	7	0	0	7	0	0	0	527
8:45 AM	9	190	0	0	240	4	2	0	10	0	0	0	455
TOTAL VOLUMES:	49	2008	0	0	2537	88	64	0	48	0	0	0	4794

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	26	1207	0	0	1456	74	50	0	27	0	0	0	2840

PEAK HR FACTOR:	0.833	0.792	0.507	0.000	0.875

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Buchanon Park Access Eastbound			Buchanon Park Access Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1	0	1	0	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	1	0	1	0	0	0	0	0	2

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Buchanon Park Access East Leg	Buchanon Park Access West Leg	TOTAL
7:00 AM	0	0	0	2	2
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1
7:45 AM	0	0	0	1	1
8:00 AM	0	2	0	1	3
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	1	1
8:45 AM	0	3	0	0	3
TOTAL VOLUMES:	0	6	0	5	11

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	1	0	3	4

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: Buchanon Park Access

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **5:00 PM to 6:00 PM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Buchanon Park Access Eastbound			Buchanon Park Access Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	22	303	0	0	276	21	6	0	11	0	0	0	639
4:15 PM	18	306	0	0	356	17	9	0	12	0	0	0	718
4:30 PM	13	336	0	0	328	12	7	0	10	0	0	0	706
4:45 PM	14	332	0	0	367	13	3	0	6	0	0	0	735
5:00 PM	16	360	0	0	350	8	8	0	7	0	0	0	749
5:15 PM	19	378	0	0	322	13	3	0	8	0	0	0	743
5:30 PM	30	347	0	0	343	13	6	0	20	0	0	0	759
5:45 PM	30	340	0	0	295	21	11	0	44	0	0	0	741
TOTAL VOLUMES:	162	2702	0	0	2637	118	53	0	118	0	0	0	5790

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	95	1425	0	0	1310	55	28	0	79	0	0	0	2992

PEAK HR FACTOR:	0.957	0.953	0.486	0.000	0.986

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Buchanon Park Access Eastbound			Buchanon Park Access Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	5	0	0	0	0	0	0	0	0	0	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	2	0	0	0	0	0	0	0	0	0	0	2

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Buchanon Park Access East Leg	Buchanon Park Access West Leg	TOTAL
4:00 PM	0	0	0	2	2
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	5	5
5:15 PM	0	1	0	3	4
5:30 PM	0	0	0	3	3
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	13	14

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	1	0	11	12

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: Adams Street

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:00AM to 8:00 AM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Adams Street Eastbound			Adams Street Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	228	9	4	332	111	47	4	28	22	9	10	804
7:15 AM	7	293	6	6	329	64	75	4	27	15	6	10	842
7:30 AM	7	270	7	1	302	9	31	2	17	24	1	9	680
7:45 AM	6	219	7	5	303	20	21	2	15	15	1	11	625
8:00 AM	2	165	4	5	269	27	16	1	6	16	2	6	519
8:15 AM	7	170	11	3	231	14	37	1	12	11	3	14	514
8:30 AM	7	160	5	13	263	30	43	2	14	13	3	12	565
8:45 AM	3	155	9	7	224	23	24	0	13	14	1	12	485
TOTAL VOLUMES:	39	1660	58	44	2253	298	294	16	132	130	26	84	5034

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	20	1010	29	16	1266	204	174	12	87	76	17	40	2951

PEAK HR FACTOR:	0.865	0.831	0.644	0.811	0.876

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Adams Street Eastbound			Adams Street Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Adams Street East Leg	Adams Street West Leg	TOTAL
7:00 AM	3	0	0	1	4
7:15 AM	1	1	1	1	4
7:30 AM	2	0	1	1	4
7:45 AM	2	2	1	0	5
8:00 AM	1	0	0	1	2
8:15 AM	0	0	0	0	0
8:30 AM	0	0	1	4	5
8:45 AM	1	0	0	0	1
TOTAL VOLUMES:	10	3	4	8	25

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	8	3	3	3	17

PO Box 1178
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951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: Adams Street

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Adams Street Eastbound			Adams Street Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	10	292	22	10	259	26	23	6	25	14	1	6	694
4:15 PM	15	285	9	7	333	20	35	9	13	14	5	10	755
4:30 PM	19	311	21	7	305	27	29	7	17	17	3	7	770
4:45 PM	14	316	20	6	336	32	26	4	18	11	1	5	789
5:00 PM	15	334	20	9	312	32	36	10	16	14	3	9	810
5:15 PM	17	350	17	8	309	24	37	4	16	7	2	6	797
5:30 PM	23	325	21	17	313	28	48	2	20	14	4	10	825
5:45 PM	17	334	21	17	293	24	35	7	14	9	4	10	785
TOTAL VOLUMES:	130	2547	151	81	2460	213	269	49	139	100	23	63	6225

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	69	1325	78	40	1270	116	147	20	70	46	10	30	3221

PEAK HR FACTOR:	0.958	0.953	0.846	0.768	0.976

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Adams Street Eastbound			Adams Street Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	0	0	0	0	3	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	0	0	0	0	0	0	0	0	1

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Adams Street East Leg	Adams Street West Leg	TOTAL
4:00 PM	0	2	0	3	5
4:15 PM	6	1	1	3	11
4:30 PM	1	0	0	0	1
4:45 PM	0	0	1	0	1
5:00 PM	0	1	1	3	5
5:15 PM	0	1	0	3	4
5:30 PM	0	0	0	3	3
5:45 PM	5	3	0	3	11
TOTAL VOLUMES:	12	8	3	18	41

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	2	2	9	13

PO Box 1178
Corona, CA 92880
951-268-6268

Location:	Oceanside		Date: 9/20/18
N/S:	College Boulevard		Day: THURSDAY
E/W:	Via Cupeno		Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Via Cupeno Eastbound			Via Cupeno Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	29	227	6	0	392	12	9	0	5	33	2	0	715
7:15 AM	29	300	11	1	353	15	9	0	10	44	1	1	774
7:30 AM	37	260	9	0	314	13	14	0	7	32	2	0	688
7:45 AM	37	224	11	0	303	12	15	1	13	24	0	0	640
8:00 AM	57	162	8	1	271	19	13	1	13	19	1	2	567
8:15 AM	54	174	10	1	244	16	18	2	24	20	1	2	566
8:30 AM	63	147	7	0	271	15	24	1	16	24	2	1	571
8:45 AM	49	151	10	0	213	27	22	0	20	19	0	0	511
TOTAL VOLUMES:	355	1645	72	3	2361	129	124	5	108	215	9	6	5032

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	132	1011	37	1	1362	52	47	1	35	133	5	1	2817

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.868	0.876	0.716	0.755	0.910

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Via Cupeno Eastbound			Via Cupeno Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	2
TOTAL VOLUMES:	0	1	0	0	1	0	0	0	1	1	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	1	0	0	0	0	0	0	0	1

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Via Cupeno East Leg	Via Cupeno West Leg	TOTAL
7:00 AM	0	2	1	0	3
7:15 AM	0	2	0	0	2
7:30 AM	0	0	2	0	2
7:45 AM	0	1	1	0	2
8:00 AM	0	3	1	0	4
8:15 AM	0	1	1	0	2
8:30 AM	0	1	0	0	1
8:45 AM	0	1	1	0	2
TOTAL VOLUMES:	0	11	7	0	18

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	5	4	0	9

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: Via Cupeno

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **5:00 PM to 6:00 PM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			Via Cupeno Eastbound			Via Cupeno Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	73	259	20	0	285	26	56	1	40	11	1	4	776
4:15 PM	94	255	30	1	307	23	41	2	31	18	2	4	808
4:30 PM	97	281	26	2	287	35	63	5	34	15	2	1	848
4:45 PM	88	286	19	3	328	21	57	5	43	14	2	2	868
5:00 PM	110	302	30	0	312	24	64	4	50	11	2	3	912
5:15 PM	101	319	25	2	303	28	62	1	42	18	2	1	904
5:30 PM	105	293	25	0	280	26	65	2	50	18	2	1	867
5:45 PM	103	336	19	0	261	34	69	2	33	15	4	1	877
TOTAL VOLUMES:	771	2331	194	8	2363	217	477	22	323	120	17	17	6860

PM Peak Hr Begins at: 500 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	419	1250	99	2	1156	112	260	9	175	62	10	6	3560

PEAK HR FACTOR:	0.965	0.945	0.941	0.929	0.976

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			Via Cupeno Eastbound			Via Cupeno Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	0	0	1	0	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	1	0	0	0	0	0	1

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	Via Cupeno East Leg	Via Cupeno West Leg	TOTAL
4:00 PM	0	2	0	0	2
4:15 PM	1	1	2	0	4
4:30 PM	0	11	9	0	20
4:45 PM	0	0	2	0	2
5:00 PM	0	2	3	0	5
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	2	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	1	17	16	2	36

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	3	3	2	8

Counts unlimited
PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: SR-76

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	12	87	54	116	162	102	72	169	0	135	396	100	1405
7:15 AM	11	126	93	174	178	90	76	206	6	135	295	124	1514
7:30 AM	11	113	67	123	185	64	92	246	7	120	311	116	1455
7:45 AM	14	121	47	79	183	69	51	145	9	137	368	108	1331
8:00 AM	14	103	59	90	144	78	52	171	2	117	333	79	1242
8:15 AM	9	88	40	119	105	70	57	200	6	104	399	90	1287
8:30 AM	7	77	42	87	161	65	57	193	7	125	349	75	1245
8:45 AM	11	80	44	91	128	70	70	158	6	74	306	77	1115
TOTAL VOLUMES:	89	795	446	879	1246	608	527	1488	43	947	2757	769	10594

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	48	447	261	492	708	325	291	766	22	527	1370	448	5705

PEAK HR FACTOR:	0.822	0.863	0.782	0.929	0.942

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	1	0	0	0	1	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	1	0	0	0	1	0	0	0	0	2

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	SR-76 East Leg	SR-76 West Leg	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	1	1	0	2
7:30 AM	0	0	0	1	1
7:45 AM	0	1	1	0	2
8:00 AM	0	0	1	1	2
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	1	1
8:45 AM	0	0	0	2	2
TOTAL VOLUMES:	0	2	3	7	12

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	2	2	2	6

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: College Boulevard
E/W: SR-76

Date: 9/20/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	College Boulevard Northbound			College Boulevard Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	11	160	79	125	144	97	74	281	9	73	213	141	1407
4:15 PM	10	149	100	126	169	95	114	318	8	65	227	114	1495
4:30 PM	10	158	96	124	165	95	128	324	17	68	201	141	1527
4:45 PM	12	154	93	134	199	101	109	324	12	75	231	144	1588
5:00 PM	16	190	73	137	174	107	120	337	12	89	205	136	1596
5:15 PM	7	170	99	132	161	92	137	338	13	71	205	145	1570
5:30 PM	7	166	56	112	177	101	134	318	13	72	234	139	1529
5:45 PM	9	166	70	92	178	102	136	322	5	64	233	145	1522
TOTAL VOLUMES:	82	1313	666	982	1367	790	952	2562	89	577	1749	1105	12234

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	42	680	321	515	711	401	500	1317	50	307	875	564	6283

PEAK HR FACTOR:	0.935	0.937	0.956	0.970	0.984

Bicycle Counts

	College Boulevard Northbound			College Boulevard Southbound			SR-76 Eastbound			SR-76 Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	1	1	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	College Boulevard North Leg	College Boulevard South Leg	SR-76 East Leg	SR-76 West Leg	TOTAL
4:00 PM	0	2	2	3	7
4:15 PM	0	0	0	0	0
4:30 PM	2	0	0	4	6
4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	3	4
5:15 PM	0	2	0	4	6
5:30 PM	0	0	0	5	5
5:45 PM	0	0	0	1	1
TOTAL VOLUMES:	2	4	3	20	29

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	2	1	12	15

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Vandergrift Boulevard
E/W: N. River Road

Date: 9/27/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:00AM to 8:00 AM**

Vehicle Counts

	Vandergrift Boulevard Northbound			Vandergrift Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	30	215	49	31	198	11	10	10	45	93	18	73	783
7:15 AM	26	228	49	18	182	7	9	15	15	108	13	61	731
7:30 AM	32	203	53	22	160	12	22	17	28	104	13	60	726
7:45 AM	28	161	46	21	161	8	6	14	21	105	7	39	617
8:00 AM	18	134	58	15	162	7	5	18	24	85	13	40	579
8:15 AM	28	103	62	17	140	11	10	16	27	90	14	41	559
8:30 AM	26	84	82	22	144	8	14	9	22	89	20	24	544
8:45 AM	22	99	63	18	129	5	8	14	19	107	11	26	521
TOTAL VOLUMES:	210	1227	462	164	1276	69	84	113	201	781	109	364	5060

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	116	807	197	92	701	38	47	56	109	410	51	233	2857

	Northbound	Southbound	Eastbound	Westbound	TOTAL
PEAK HR FACTOR:	0.924	0.866	0.791	0.943	0.912

Bicycle Counts

	Vandergrift Boulevard Northbound			Vandergrift Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
TOTAL VOLUMES:	0	0	0	0	2	0	0	1	0	1	1	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	1	0	0	1	0	2

Pedestrian Counts

	Vandergrift Boulevard North Leg	Vandergrift Boulevard South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
7:00 AM	0	8	2	2	12
7:15 AM	0	2	1	0	3
7:30 AM	2	8	3	3	16
7:45 AM	2	3	1	0	6
8:00 AM	4	3	3	0	10
8:15 AM	2	6	1	6	15
8:30 AM	6	5	2	2	15
8:45 AM	0	6	2	3	11
TOTAL VOLUMES:	16	41	15	16	88

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	4	21	7	5	37

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Oceanside
N/S: Vandergrift Boulevard
E/W: N. River Road

Date: 9/27/18
Day: THURSDAY
Project # 143-18669

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:30 PM to 5:30 PM**

Vehicle Counts

	Vandergrift Boulevard Northbound			Vandergrift Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	47	163	107	60	222	13	15	15	24	68	34	19	787
4:15 PM	41	145	82	58	213	11	12	24	33	77	33	26	755
4:30 PM	58	207	97	65	233	10	10	21	26	68	22	14	831
4:45 PM	48	152	109	57	226	14	20	26	28	77	22	25	804
5:00 PM	65	177	122	46	202	18	12	21	32	78	39	19	831
5:15 PM	54	148	94	44	221	11	28	19	35	77	23	31	785
5:30 PM	68	177	92	43	228	12	22	26	27	70	14	22	801
5:45 PM	48	178	110	32	166	9	24	20	30	67	22	27	733
TOTAL VOLUMES:	429	1347	813	405	1711	98	143	172	235	582	209	183	6327

PM Peak Hr Begins at: 430 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	225	684	422	212	882	53	70	87	121	300	106	89	3251

PEAK HR FACTOR:	0.914	0.931	0.848	0.910	0.978

Bicycle Counts

	Vandergrift Boulevard Northbound			Vandergrift Boulevard Southbound			N. River Road Eastbound			N. River Road Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	0	0	0	5	0	6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	4	0	4

Pedestrian Counts

	Vandergrift Boulevard North Leg	Vandergrift Boulevard South Leg	N. River Road East Leg	N. River Road West Leg	TOTAL
4:00 PM	1	13	1	5	20
4:15 PM	0	10	4	1	15
4:30 PM	3	7	2	5	17
4:45 PM	8	9	3	6	26
5:00 PM	0	6	0	1	7
5:15 PM	2	12	2	5	21
5:30 PM	1	12	2	4	19
5:45 PM	1	8	1	2	12
TOTAL VOLUMES:	16	77	15	29	137

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	13	34	7	17	71

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
Douglas Drive
B/ Rainer Way - River Road

File Name 005
Site Code: 143-18669
24 Hour Directional Volume Count

Date: 9/20/2018	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals			
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	45	236			14	198				
12:15	24	218			9	223				
12:30	39	223			17	223				
12:45	24	227	132	904	11	230	51	874	183	1778
1:00	20	216			7	249				
1:15	18	227			16	215				
1:30	21	218			6	211				
1:45	17	220	76	881	10	230	39	905	115	1786
2:00	17	247			14	260				
2:15	12	339			9	224				
2:30	8	410			18	233				
2:45	16	320	53	1316	10	308	51	1025	104	2341
3:00	8	378			30	283				
3:15	14	354			27	310				
3:30	23	446			50	286				
3:45	18	390	63	1568	43	262	150	1141	213	2709
4:00	17	398			75	280				
4:15	25	409			98	275				
4:30	28	414			97	316				
4:45	29	441	99	1662	119	319	389	1190	488	2852
5:00	54	450			157	299				
5:15	82	444			228	321				
5:30	67	426			235	264				
5:45	105	393	308	1713	281	283	901	1167	1209	2880
6:00	125	422			320	248				
6:15	137	372			426	283				
6:30	180	367			506	228				
6:45	192	306	634	1467	458	238	1710	997	2344	2464
7:00	261	285			401	224				
7:15	250	311			410	186				
7:30	204	293			413	159				
7:45	176	278	891	1167	424	164	1648	733	2539	1900
8:00	152	254			328	122				
8:15	167	210			359	101				
8:30	173	212			313	119				
8:45	169	224	661	900	260	104	1260	446	1921	1346
9:00	130	223			238	99				
9:15	137	206			244	90				
9:30	140	173			223	76				
9:45	158	142	565	744	207	83	912	348	1477	1092
10:00	147	119			227	48				
10:15	173	115			214	44				
10:30	158	96			185	43				
10:45	194	91	672	421	188	52	814	187	1486	608
11:00	198	85			235	32				
11:15	199	67			202	33				
11:30	216	55			212	31				
11:45	224	46	837	253	225	20	874	116	1711	369
Totals	4991	12996			8799	9129				
Combined Totals		17987				17928				
ADT										35915
AM Peak Hour	645	AM			615	AM				
Volume	907				1791					
P.H.F.	0.869				0.885					
PM Peak Hour		445	PM			430	PM			
Volume		1761				1255				
P.H.F.		0.978				0.977				
Percentage	27.7%	72.3%			49.1%	50.9%				

Counts Unlimited, Inc.
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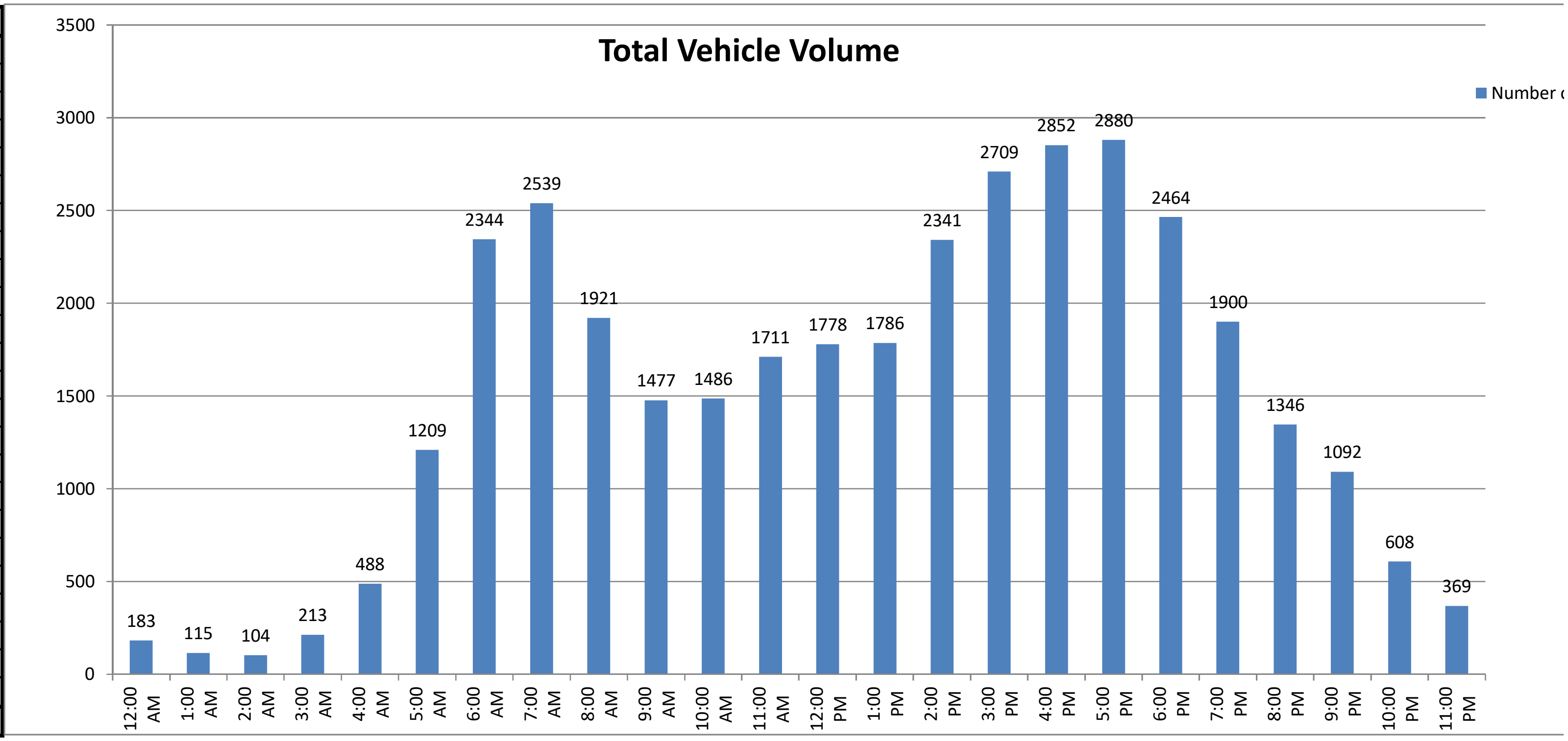
24 Hour Volume Plot

Douglas Drive
B/ Rainer Way - River Road
9/20/2018

Start Time	9/20/2018
12:00 AM	183
1:00 AM	115
2:00 AM	104
3:00 AM	213
4:00 AM	488
5:00 AM	1209
6:00 AM	2344
7:00 AM	2539
8:00 AM	1921
9:00 AM	1477
10:00 AM	1486
11:00 AM	1711
12:00 PM	1778
1:00 PM	1786
2:00 PM	2341
3:00 PM	2709
4:00 PM	2852
5:00 PM	2880
6:00 PM	2464
7:00 PM	1900
8:00 PM	1346
9:00 PM	1092
10:00 PM	608
11:00 PM	369
Total	35915



Volumes represent the combined totals for both directions

Phone: 951-268-6268
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City of Oceanside
Douglas Drive
B/ Pala Road - Rainer Way

File Name 004
Site Code: 143-18669
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	46	237			14	209				
12:15	23	218			9	218				
12:30	37	213			13	224				
12:45	23	225	129	893	10	227	46	878	175	1771
1:00	22	216			8	261				
1:15	18	223			15	228				
1:30	21	213			7	227				
1:45	20	213	81	865	11	251	41	967	122	1832
2:00	16	249			15	284				
2:15	10	363			10	225				
2:30	8	405			18	227				
2:45	14	346	48	1363	10	311	53	1047	101	2410
3:00	8	359			28	294				
3:15	14	371			30	314				
3:30	21	449			53	277				
3:45	18	386	61	1565	44	269	155	1154	216	2719
4:00	12	375			86	283				
4:15	24	431			102	267				
4:30	25	405			114	333				
4:45	30	455	91	1666	126	326	428	1209	519	2875
5:00	49	433			175	291				
5:15	77	443			248	324				
5:30	62	435			253	266				
5:45	95	396	283	1707	292	287	968	1168	1251	2875
6:00	112	426			344	248				
6:15	135	365			456	259				
6:30	181	373			568	257				
6:45	202	319	630	1483	522	234	1890	998	2520	2481
7:00	251	282			433	227				
7:15	245	310			419	189				
7:30	195	307			447	161				
7:45	176	265	867	1164	454	146	1753	723	2620	1887
8:00	149	256			358	117				
8:15	166	214			387	102				
8:30	168	206			338	113				
8:45	168	230	651	906	275	95	1358	427	2009	1333
9:00	133	219			246	94				
9:15	141	221			255	83				
9:30	139	168			233	86				
9:45	164	148	577	756	216	71	950	334	1527	1090
10:00	146	118			233	47				
10:15	166	118			227	42				
10:30	159	96			206	40				
10:45	198	89	669	421	196	45	862	174	1531	595
11:00	196	88			237	31				
11:15	193	70			225	29				
11:30	215	59			221	25				
11:45	225	47	829	264	233	26	916	111	1745	375
Totals	4916	13053			9420	9190				
Combined Totals		17969				18610				
ADT										36579
AM Peak Hour	645	AM			615	AM				
Volume	893				1979					
P.H.F.	0.889				0.871					
PM Peak Hour		445	PM			430	PM			
Volume		1766				1274				
P.H.F.		0.970				0.956				
Percentage	27.4%	72.6%			50.6%	49.4%				

Counts Unlimited, Inc.
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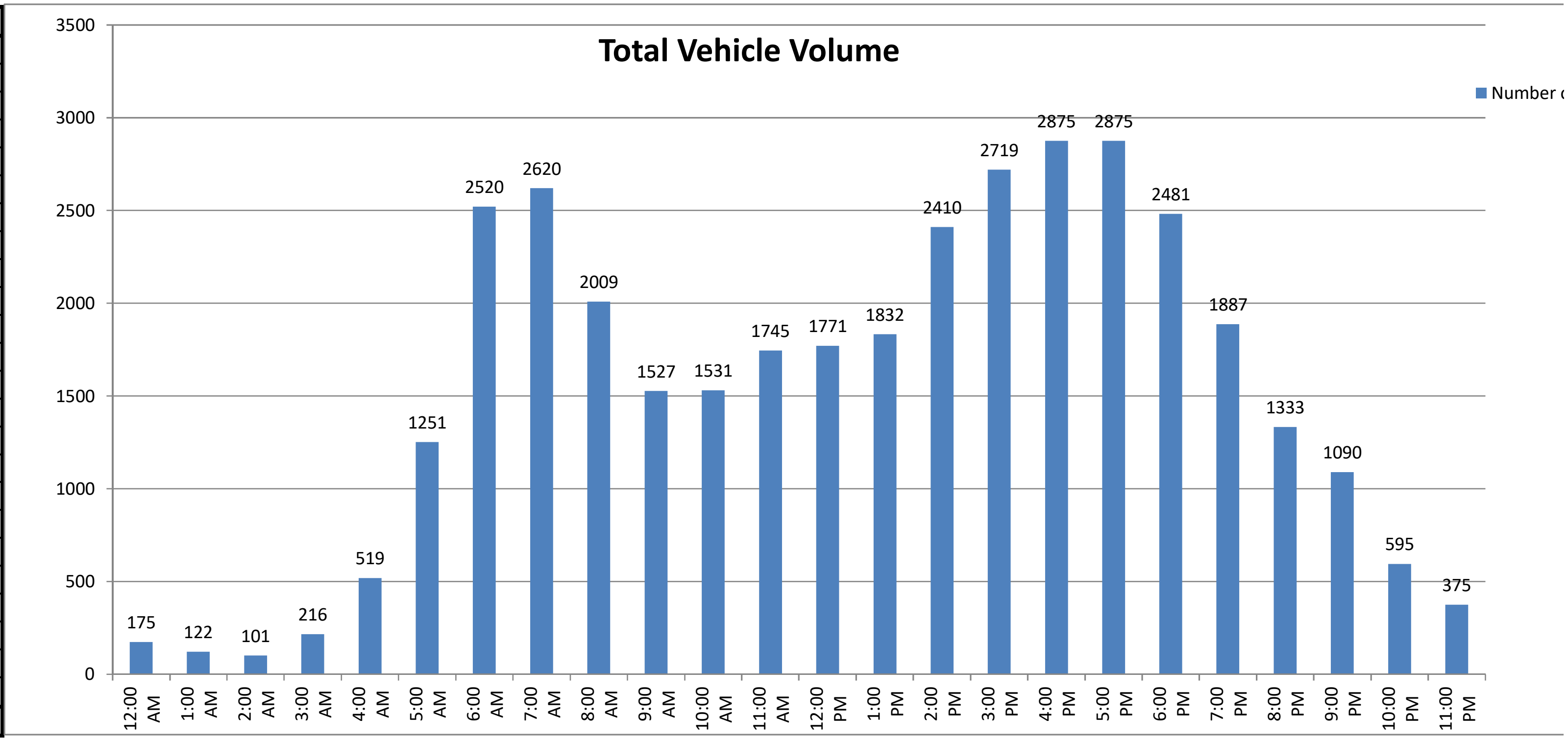
24 Hour Volume Plot

Douglas Drive

B/ Pala Road - Rainer Way

9/20/2018

Start Time	9/20/2018
12:00 AM	175
1:00 AM	122
2:00 AM	101
3:00 AM	216
4:00 AM	519
5:00 AM	1251
6:00 AM	2520
7:00 AM	2620
8:00 AM	2009
9:00 AM	1527
10:00 AM	1531
11:00 AM	1745
12:00 PM	1771
1:00 PM	1832
2:00 PM	2410
3:00 PM	2719
4:00 PM	2875
5:00 PM	2875
6:00 PM	2481
7:00 PM	1887
8:00 PM	1333
9:00 PM	1090
10:00 PM	595
11:00 PM	375
Total	36579



Volumes represent the combined totals for both directions

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City of Oceanside
Douglas Drive
B/ El Camino Real - Pala Road

File Name 003
Site Code: 143-18669
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	44	219			14	232				
12:15	26	211			8	226				
12:30	37	232			12	226				
12:45	26	243	133	905	11	224	45	908	178	1813
1:00	22	246			6	275				
1:15	21	231			17	230				
1:30	19	221			8	240				
1:45	21	215	83	913	10	254	41	999	124	1912
2:00	15	256			14	282				
2:15	11	396			10	226				
2:30	8	390			18	220				
2:45	14	357	48	1399	14	287	56	1015	104	2414
3:00	8	400			25	271				
3:15	13	401			29	287				
3:30	19	421			54	316				
3:45	19	404	59	1626	42	272	150	1146	209	2772
4:00	12	394			91	299				
4:15	21	424			107	271				
4:30	21	417			116	316				
4:45	28	475	82	1710	132	313	446	1199	528	2909
5:00	46	426			173	287				
5:15	63	452			265	311				
5:30	54	448			271	260				
5:45	96	409	259	1735	300	283	1009	1141	1268	2876
6:00	105	432			360	256				
6:15	120	370			474	255				
6:30	176	384			560	239				
6:45	188	331	589	1517	532	229	1926	979	2515	2496
7:00	242	283			461	218				
7:15	244	330			435	184				
7:30	199	306			449	156				
7:45	163	277	848	1196	455	153	1800	711	2648	1907
8:00	184	273			357	112				
8:15	162	221			394	98				
8:30	144	217			368	103				
8:45	161	242	651	953	296	90	1415	403	2066	1356
9:00	131	226			256	90				
9:15	135	228			273	77				
9:30	137	182			238	81				
9:45	167	153	570	789	233	67	1000	315	1570	1104
10:00	142	128			238	40				
10:15	182	117			230	44				
10:30	152	100			215	39				
10:45	209	100	685	445	196	45	879	168	1564	613
11:00	196	97			243	32				
11:15	200	71			223	28				
11:30	229	61			220	21				
11:45	224	46	849	275	222	21	908	102	1757	377
Totals	4856	13463			9675	9086				
Combined Totals		18319				18761				
ADT										37080
AM Peak Hour	645	AM			615	AM				
Volume	873				2027					
P.H.F.	0.894				0.905					
PM Peak Hour		445	PM			430	PM			
Volume		1801				1227				
P.H.F.		0.948				0.971				
Percentage	26.5%	73.5%			51.6%	48.4%				

Counts Unlimited, Inc.
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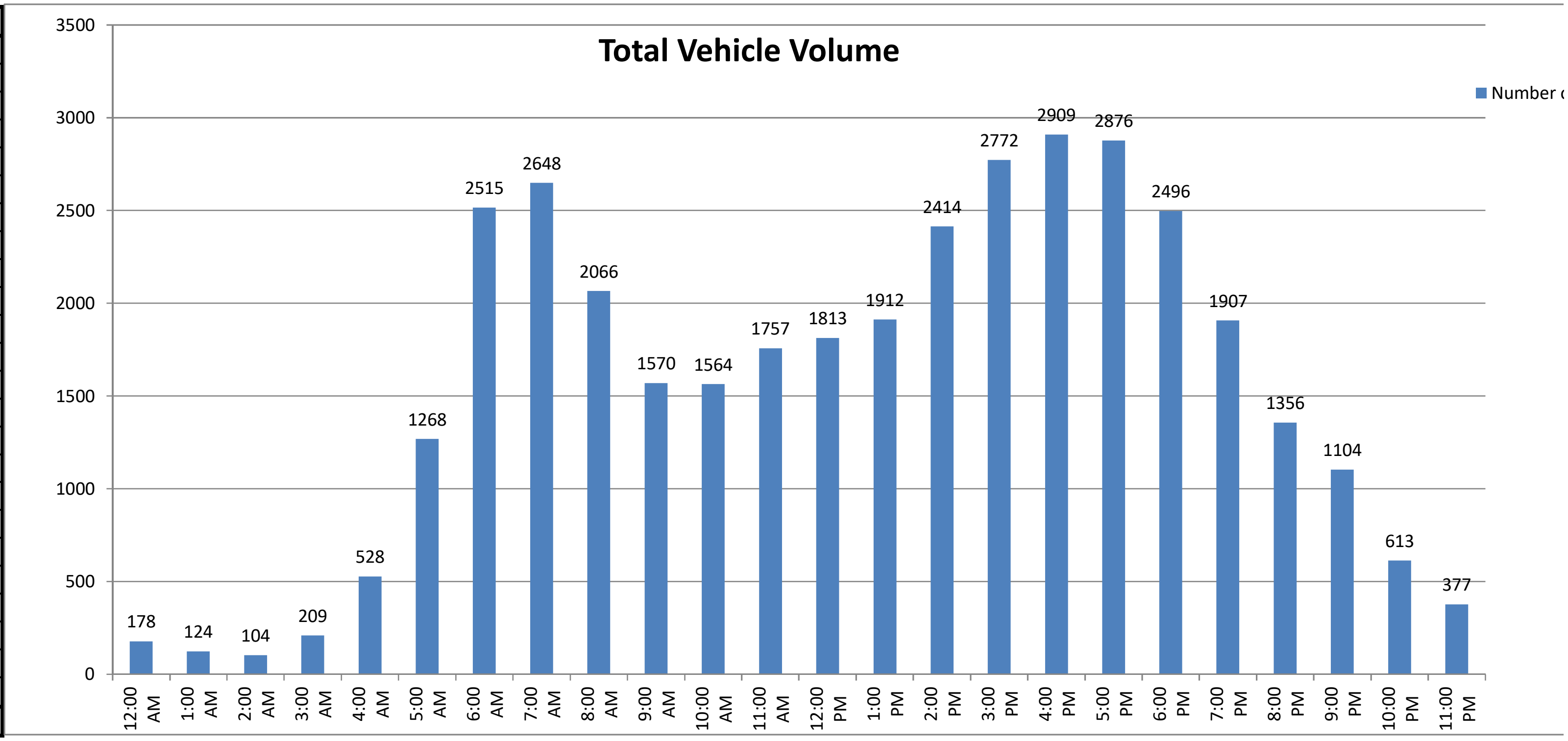
24 Hour Volume Plot

Douglas Drive

B/ El Camino Real - Pala Road

9/20/2018

Start Time	9/20/2018
12:00 AM	178
1:00 AM	124
2:00 AM	104
3:00 AM	209
4:00 AM	528
5:00 AM	1268
6:00 AM	2515
7:00 AM	2648
8:00 AM	2066
9:00 AM	1570
10:00 AM	1564
11:00 AM	1757
12:00 PM	1813
1:00 PM	1912
2:00 PM	2414
3:00 PM	2772
4:00 PM	2909
5:00 PM	2876
6:00 PM	2496
7:00 PM	1907
8:00 PM	1356
9:00 PM	1104
10:00 PM	613
11:00 PM	377
Total	37080



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
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City of Oceanside
Douglas Drive
B/ El Camino Real - Mission Avenue

File Name 001
Site Code: 143-18947
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
12/13/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	41	164			6	134				
12:15	33	158			16	160				
12:30	17	145			12	145				
12:45	22	166	113	633	6	147	40	586	153	1219
1:00	19	137			1	119				
1:15	16	136			9	171				
1:30	14	149			6	168				
1:45	14	144	63	566	14	155	30	613	93	1179
2:00	10	163			10	200				
2:15	14	167			9	190				
2:30	9	268			10	171				
2:45	11	283	44	881	8	168	37	729	81	1610
3:00	10	225			13	158				
3:15	9	292			14	179				
3:30	9	259			26	161				
3:45	8	243	36	1019	29	174	82	672	118	1691
4:00	12	249			29	171				
4:15	12	258			38	193				
4:30	8	255			71	200				
4:45	21	295	53	1057	70	213	208	777	261	1834
5:00	17	276			59	178				
5:15	26	293			105	184				
5:30	38	260			139	177				
5:45	28	252	109	1081	145	161	448	700	557	1781
6:00	49	262			146	186				
6:15	60	232			171	173				
6:30	73	186			198	140				
6:45	97	205	279	885	304	146	819	645	1098	1530
7:00	158	223			358	93				
7:15	193	207			257	105				
7:30	213	185			233	91				
7:45	130	192	694	807	225	91	1073	380	1767	1187
8:00	118	147			261	65				
8:15	139	163			224	80				
8:30	111	167			203	68				
8:45	115	126	483	603	220	91	908	304	1391	907
9:00	93	157			171	69				
9:15	99	162			166	58				
9:30	83	132			143	51				
9:45	110	128	385	579	180	46	660	224	1045	803
10:00	93	102			115	35				
10:15	115	80			152	41				
10:30	121	77			177	34				
10:45	137	97	466	356	152	31	596	141	1062	497
11:00	127	74			122	28				
11:15	129	64			156	24				
11:30	131	48			163	12				
11:45	143	50	530	236	148	22	589	86	1119	322
Totals	3255	8703			5490	5857				
Combined Totals		11958				11347				
ADT										23305
AM Peak Hour	700	AM			645	AM				
Volume	694				1152					
P.H.F.	0.815				0.804					
PM Peak Hour		445	PM			415	PM			
Volume		1124				784				
P.H.F.		0.953				0.920				
Percentage	27.2%	72.8%			48.4%	51.6%				

Counts Unlimited, Inc.
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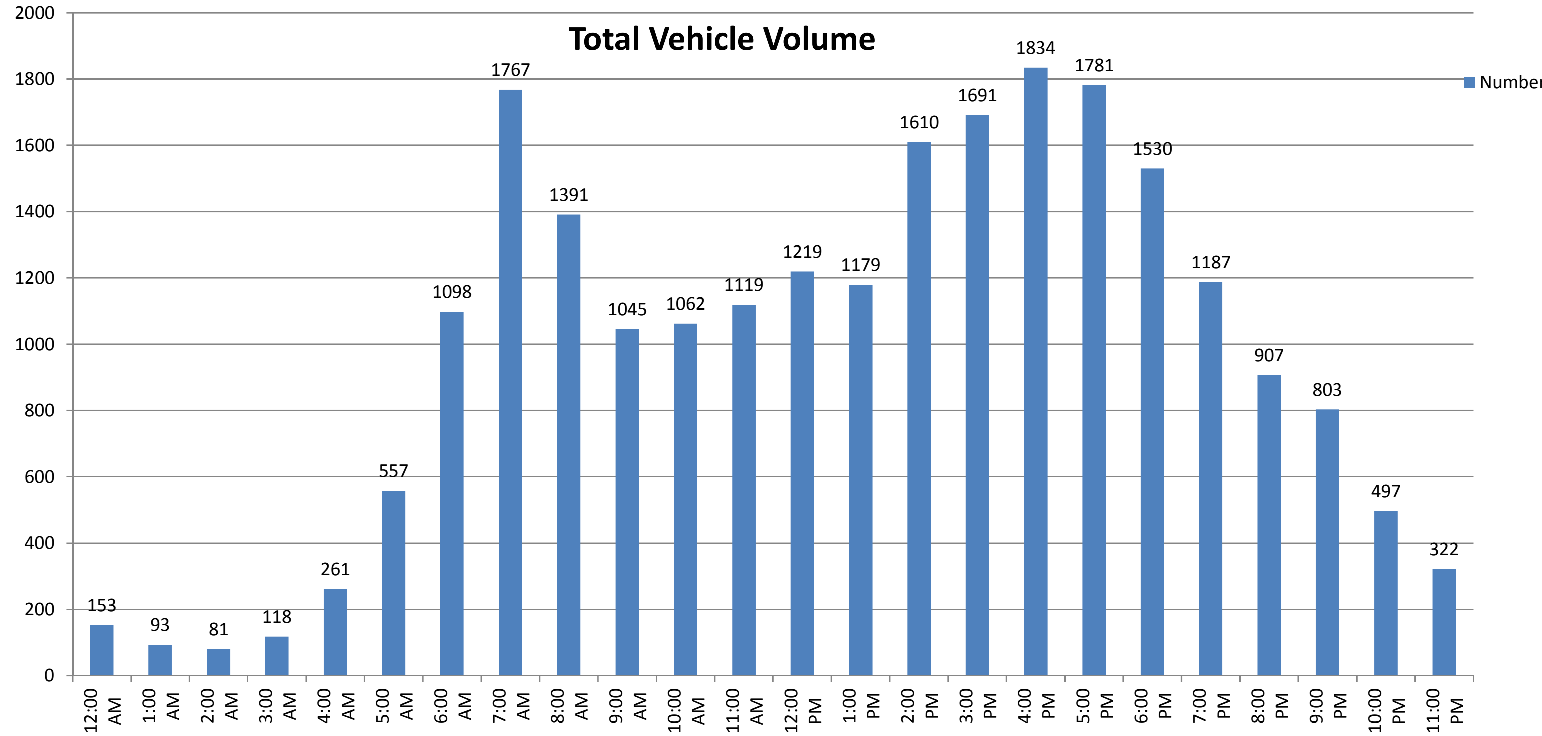
24 Hour Volume Plot

Douglas Drive
B/ El Camino Real - Mission Avenue
12/13/2018

Start Time	#########
12:00 AM	153
1:00 AM	93
2:00 AM	81
3:00 AM	118
4:00 AM	261
5:00 AM	557
6:00 AM	1098
7:00 AM	1767
8:00 AM	1391
9:00 AM	1045
10:00 AM	1062
11:00 AM	1119
12:00 PM	1219
1:00 PM	1179
2:00 PM	1610
3:00 PM	1691
4:00 PM	1834
5:00 PM	1781
6:00 PM	1530
7:00 PM	1187
8:00 PM	907
9:00 PM	803
10:00 PM	497
11:00 PM	322
Total	23305



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
Douglas Drive
B/ State Route 76 - Mission Avenue

File Name 001
Site Code: 143-18669
24 Hour Directional Volume Count

Date: 9/20/2018	Northbound				Southbound					
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	22	153			13	175				
12:15	15	133			9	146				
12:30	22	172			10	146				
12:45	13	127	72	585	5	113	37	580	109	1165
1:00	19	152			7	167				
1:15	13	146			12	142				
1:30	16	128			5	138				
1:45	10	125	58	551	6	134	30	581	88	1132
2:00	8	143			11	156				
2:15	8	208			12	135				
2:30	8	180			15	115				
2:45	8	169	32	700	11	149	49	555	81	1255
3:00	11	156			16	144				
3:15	9	213			27	155				
3:30	16	153			34	156				
3:45	18	178	54	700	32	156	109	611	163	1311
4:00	14	204			70	152				
4:15	20	182			78	153				
4:30	14	173			84	154				
4:45	23	192	71	751	80	168	312	627	383	1378
5:00	43	184			102	157				
5:15	39	201			146	160				
5:30	52	174			154	169				
5:45	64	195	198	754	161	176	563	662	761	1416
6:00	85	198			190	164				
6:15	64	174			194	152				
6:30	117	163			202	138				
6:45	108	155	374	690	225	111	811	565	1185	1255
7:00	121	166			180	105				
7:15	110	148			180	134				
7:30	113	158			181	93				
7:45	71	127	415	599	209	93	750	425	1165	1024
8:00	97	139			196	81				
8:15	104	132			190	63				
8:30	100	101			179	70				
8:45	105	122	406	494	153	68	718	282	1124	776
9:00	81	100			140	71				
9:15	103	120			147	51				
9:30	108	118			124	65				
9:45	128	94	420	432	145	45	556	232	976	664
10:00	85	73			155	27				
10:15	127	73			132	35				
10:30	111	52			140	35				
10:45	131	49	454	247	103	27	530	124	984	371
11:00	139	56			155	32				
11:15	127	44			138	16				
11:30	157	37			136	17				
11:45	127	35	550	172	151	9	580	74	1130	246
Totals	3104	6675			5045	5318				
Combined Totals		9779				10363				
ADT										20142
AM Peak Hour	1045	AM			600	AM				
Volume	554				811					
P.H.F.	0.882				0.901					
PM Peak Hour		515	PM			515	PM			
Volume		768				669				
P.H.F.		0.955				0.950				
Percentage	31.7%	68.3%			48.7%	51.3%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

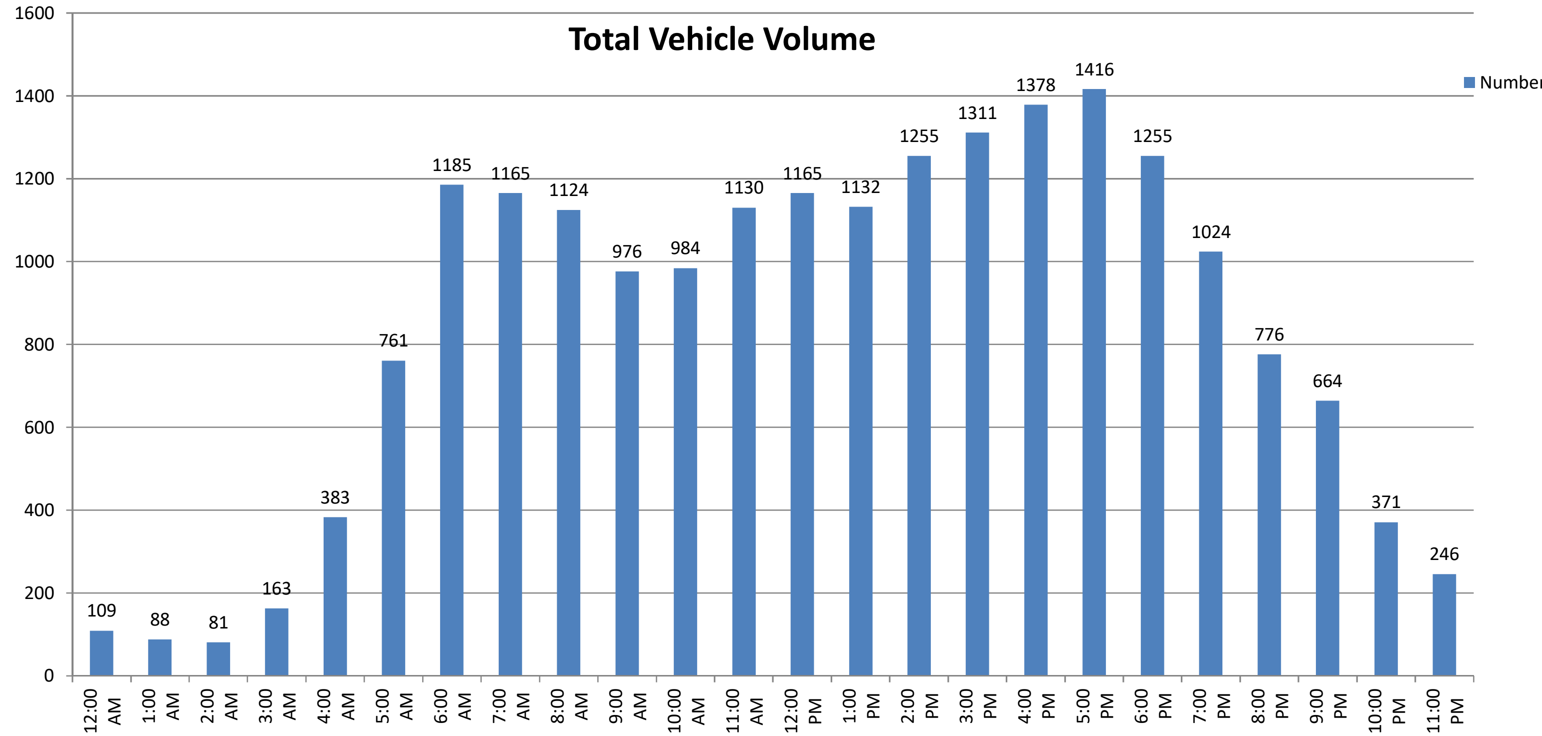
24 Hour Volume Plot

Douglas Drive

B/ State Route 76 - Mission Avenue

9/20/2018

Start Time	9/20/2018
12:00 AM	109
1:00 AM	88
2:00 AM	81
3:00 AM	163
4:00 AM	383
5:00 AM	761
6:00 AM	1185
7:00 AM	1165
8:00 AM	1124
9:00 AM	976
10:00 AM	984
11:00 AM	1130
12:00 PM	1165
1:00 PM	1132
2:00 PM	1255
3:00 PM	1311
4:00 PM	1378
5:00 PM	1416
6:00 PM	1255
7:00 PM	1024
8:00 PM	776
9:00 PM	664
10:00 PM	371
11:00 PM	246
Total	20142



Volumes represent the combined totals for both directions

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counts@countsunlimited.com
Phone: 951-268-6268

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Corona, CA 92878

City of Oceanside
River Road
B/ Douglas Drive - Avenida Descanso

File Name 006
Site Code: 143-18669
24 Hour Directional Volume Count

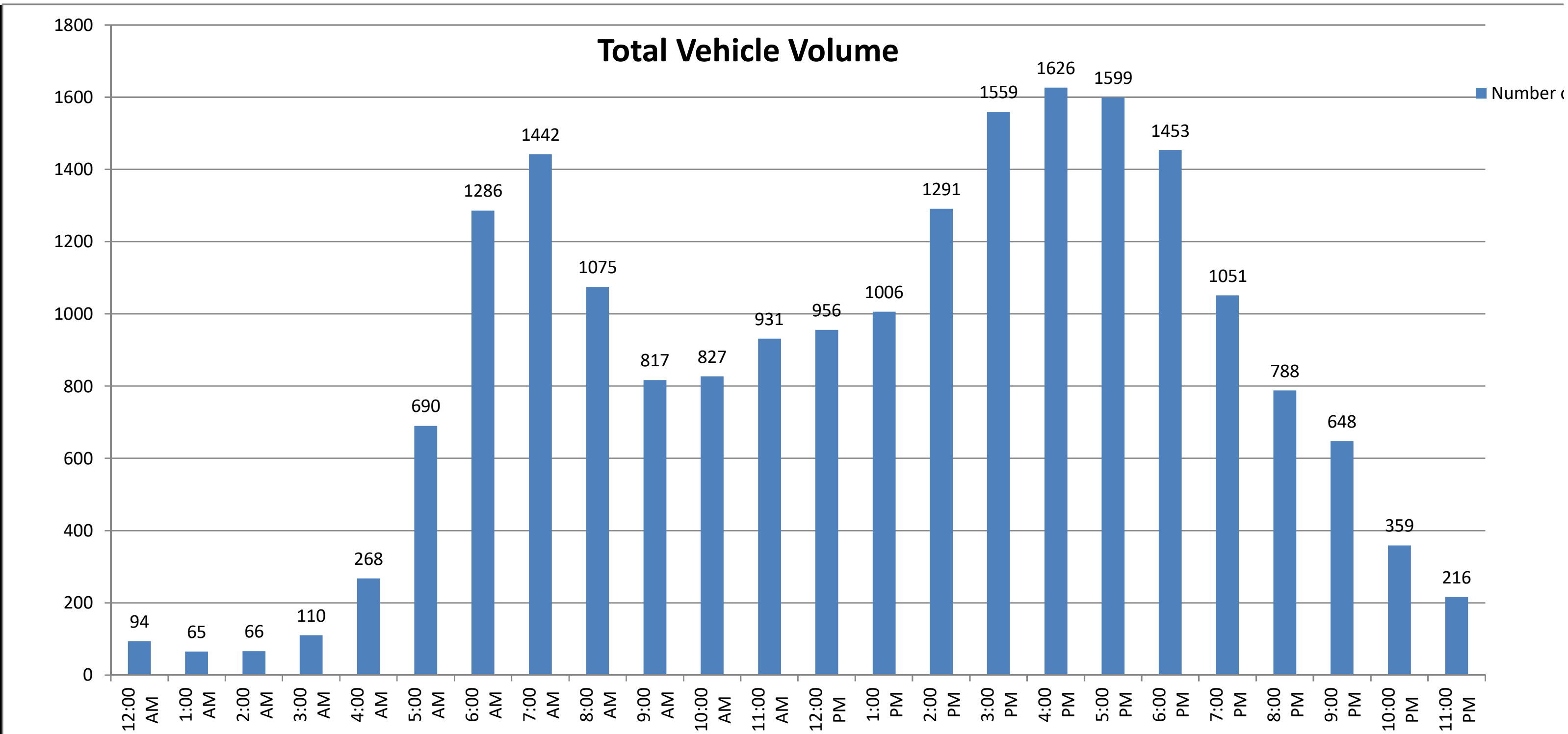
Date:	Eastbound				Westbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	22	124			5	100				
12:15	5	127			10	128				
12:30	23	119			10	127				
12:45	14	119	64	489	5	112	30	467	94	956
1:00	11	137			4	140				
1:15	8	120			5	98				
1:30	14	126			5	115				
1:45	12	136	45	519	6	134	20	487	65	1006
2:00	10	137			12	149				
2:15	6	186			9	118				
2:30	4	224			12	139				
2:45	7	199	27	746	6	139	39	545	66	1291
3:00	6	214			15	149				
3:15	4	205			19	184				
3:30	9	266			24	168				
3:45	10	233	29	918	23	140	81	641	110	1559
4:00	17	234			43	158				
4:15	13	239			49	148				
4:30	18	240			48	171				
4:45	13	264	61	977	67	172	207	649	268	1626
5:00	28	261			104	152				
5:15	38	254			143	167				
5:30	35	234			126	149				
5:45	54	221	155	970	162	161	535	629	690	1599
6:00	62	268			194	161				
6:15	66	185			263	165				
6:30	99	214			241	147				
6:45	92	164	319	831	269	149	967	622	1286	1453
7:00	138	161			236	114				
7:15	133	152			240	122				
7:30	112	157			232	104				
7:45	122	137	505	607	229	104	937	444	1442	1051
8:00	91	136			172	69				
8:15	115	114			179	81				
8:30	104	113			194	83				
8:45	84	119	394	482	136	73	681	306	1075	788
9:00	72	127			129	53				
9:15	82	115			136	66				
9:30	75	91			114	56				
9:45	97	85	326	418	112	55	491	230	817	648
10:00	85	72			130	40				
10:15	89	52			108	36				
10:30	89	60			100	31				
10:45	117	45	380	229	109	23	447	130	827	359
11:00	115	49			125	13				
11:15	119	31			114	22				
11:30	135	35			103	20				
11:45	95	27	464	142	125	19	467	74	931	216
Totals	2769	7328			4902	5224				
Combined Totals		10097				10126				
ADT										20223
AM Peak Hour	700	AM			615	AM				
Volume	505				1009					
P.H.F.	0.915				0.938					
PM Peak Hour		430	PM			430	PM			
Volume		1019				662				
P.H.F.		0.965				0.962				
Percentage	27.4%	72.6%			48.4%	51.6%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

River Road
B/ Douglas Drive - Avenida Descanso
9/20/2018

Start Time	9/20/2018
12:00 AM	94
1:00 AM	65
2:00 AM	66
3:00 AM	110
4:00 AM	268
5:00 AM	690
6:00 AM	1286
7:00 AM	1442
8:00 AM	1075
9:00 AM	817
10:00 AM	827
11:00 AM	931
12:00 PM	956
1:00 PM	1006
2:00 PM	1291
3:00 PM	1559
4:00 PM	1626
5:00 PM	1599
6:00 PM	1453
7:00 PM	1051
8:00 PM	788
9:00 PM	648
10:00 PM	359
11:00 PM	216
Total	20223



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
River Road
B/ Avenida Descanso - West Winds

File Name 007
Site Code: 143-18669
24 Hour Directional Volume Count

Date:	Eastbound				Westbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	13	104			10	102				
12:15	4	92			14	132				
12:30	12	87			10	120				
12:45	6	99	35	382	6	123	40	477	75	859
1:00	6	116			5	118				
1:15	5	91			6	99				
1:30	8	114			7	104				
1:45	7	105	26	426	6	112	24	433	50	859
2:00	4	109			10	134				
2:15	4	137			10	126				
2:30	2	175			11	148				
2:45	2	178	12	599	8	158	39	566	51	1165
3:00	5	177			13	140				
3:15	5	165			12	189				
3:30	6	220			19	173				
3:45	9	191	25	753	18	160	62	662	87	1415
4:00	12	186			39	173				
4:15	16	194			35	148				
4:30	21	184			35	171				
4:45	26	207	75	771	57	177	166	669	241	1440
5:00	38	215			81	161				
5:15	53	236			99	162				
5:30	38	192			90	145				
5:45	64	185	193	828	125	164	395	632	588	1460
6:00	82	231			133	171				
6:15	90	172			208	160				
6:30	138	171			183	148				
6:45	118	138	428	712	194	138	718	617	1146	1329
7:00	133	124			206	118				
7:15	140	136			229	123				
7:30	129	129			221	124				
7:45	132	123	534	512	193	111	849	476	1383	988
8:00	97	113			156	82				
8:15	126	92			160	88				
8:30	94	86			172	95				
8:45	82	99	399	390	123	91	611	356	1010	746
9:00	77	93			115	63				
9:15	93	89			113	68				
9:30	63	75			104	64				
9:45	80	67	313	324	101	64	433	259	746	583
10:00	78	53			118	52				
10:15	79	45			101	41				
10:30	71	42			92	38				
10:45	84	26	312	166	102	29	413	160	725	326
11:00	81	36			108	15				
11:15	92	23			109	28				
11:30	101	18			97	19				
11:45	56	14	330	91	105	21	419	83	749	174
Totals	2682	5954			4169	5390				
Combined Totals		8636				9559				
ADT										18195
AM Peak Hour	700	AM			645	AM				
Volume	534				850					
P.H.F.	0.954				0.928					
PM Peak Hour		445	PM			315	PM			
Volume		850				695				
P.H.F.		0.900				0.919				
Percentage	31.1%	68.9%			43.6%	56.4%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

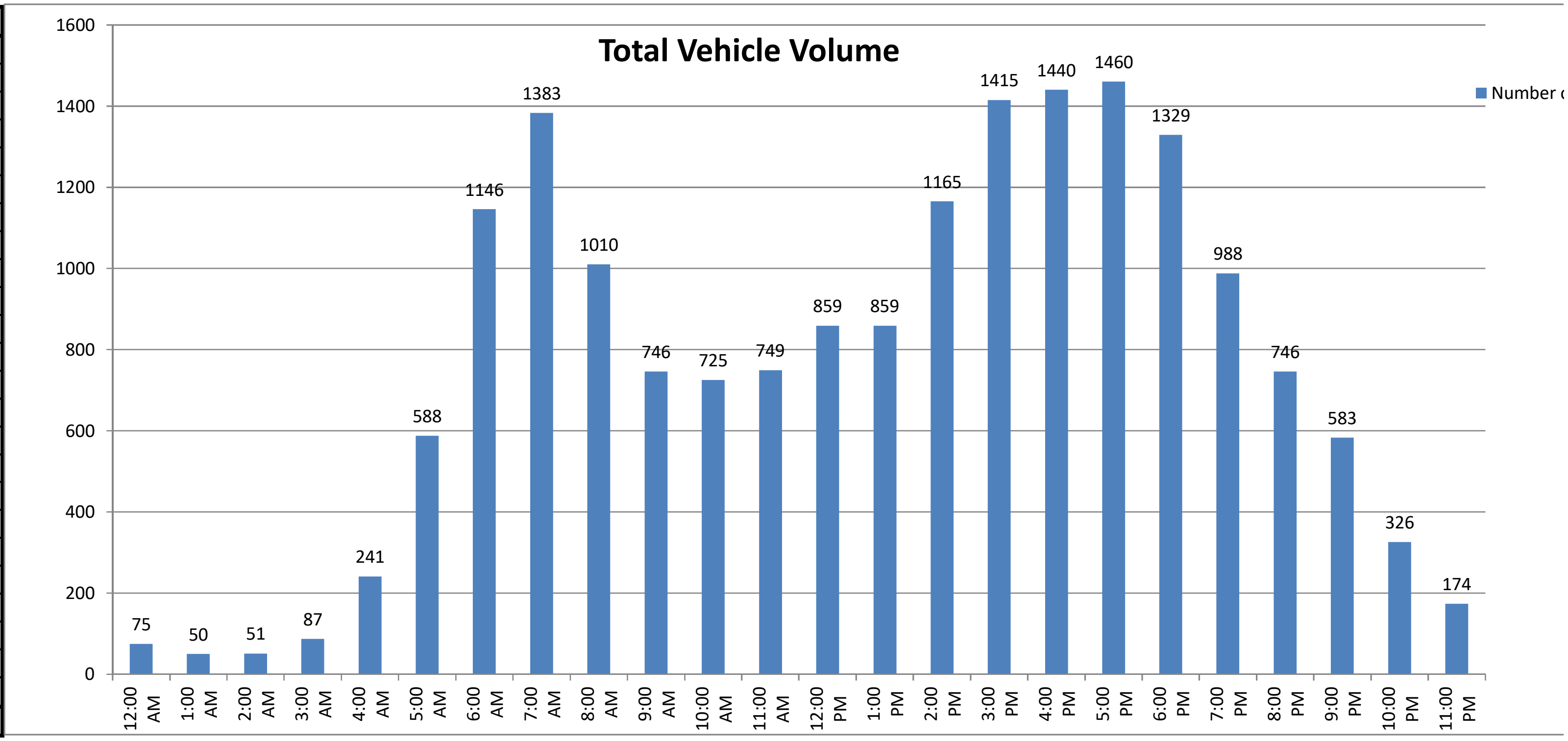
24 Hour Volume Plot

River Road

B/ Avenida Descanso - West Winds

9/20/2018

Start Time	9/20/2018
12:00 AM	75
1:00 AM	50
2:00 AM	51
3:00 AM	87
4:00 AM	241
5:00 AM	588
6:00 AM	1146
7:00 AM	1383
8:00 AM	1010
9:00 AM	746
10:00 AM	725
11:00 AM	749
12:00 PM	859
1:00 PM	859
2:00 PM	1165
3:00 PM	1415
4:00 PM	1440
5:00 PM	1460
6:00 PM	1329
7:00 PM	988
8:00 PM	746
9:00 PM	583
10:00 PM	326
11:00 PM	174
Total	18195



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
River Road
B/ Riverview Way -Calle Montecito

File Name 008
Site Code: 143-18669
24 Hour Directional Volume Count

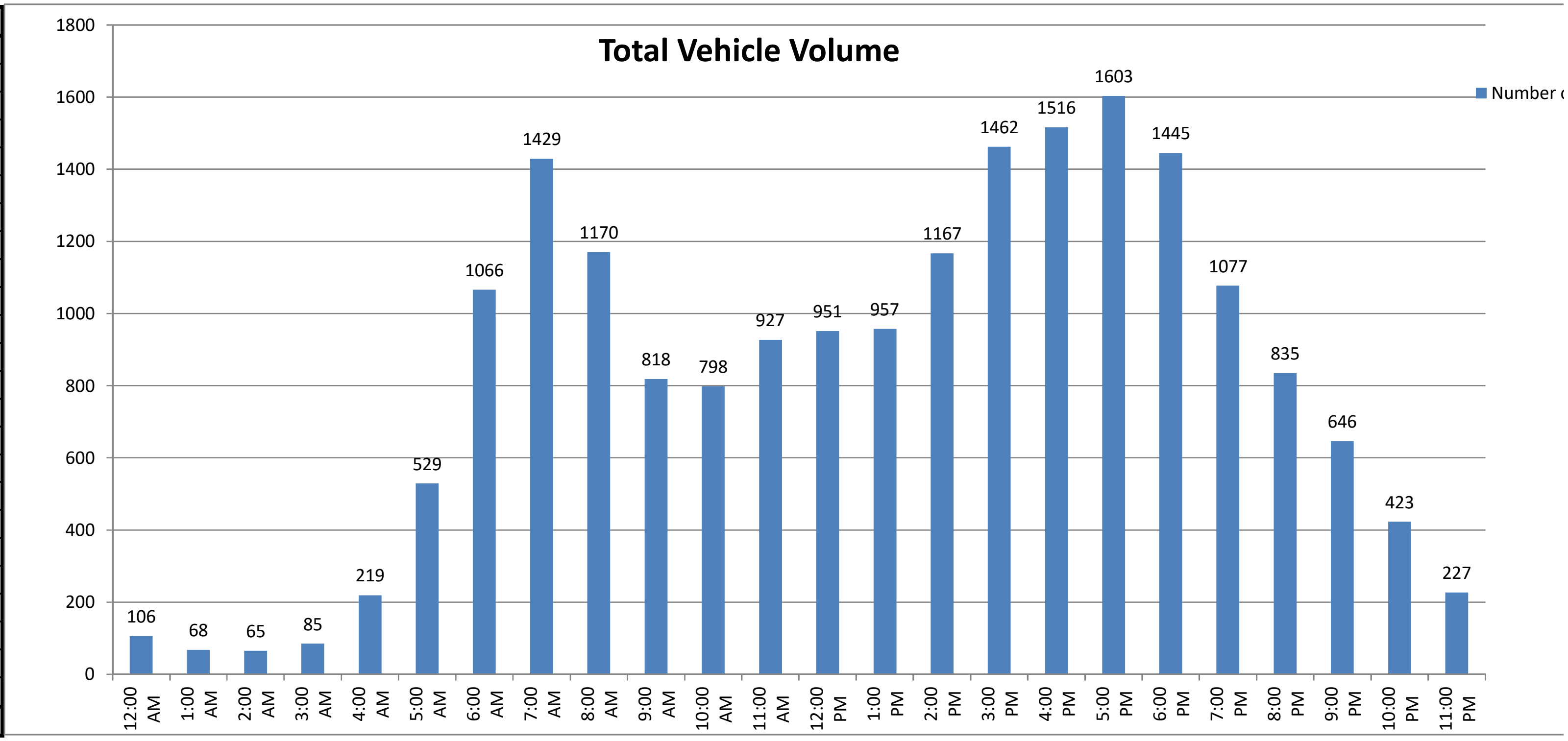
Date:	Eastbound				Westbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	20	92			14	111				
12:15	12	129			11	108				
12:30	10	126			15	139				
12:45	16	121	58	468	8	125	48	483	106	951
1:00	8	108			7	124				
1:15	12	152			5	122				
1:30	8	112			7	95				
1:45	12	140	40	512	9	104	28	445	68	957
2:00	11	139			5	128				
2:15	9	131			11	134				
2:30	7	174			9	125				
2:45	3	186	30	630	10	150	35	537	65	1167
3:00	6	183			6	163				
3:15	10	183			14	149				
3:30	10	192			11	190				
3:45	9	226	35	784	19	176	50	678	85	1462
4:00	16	223			20	167				
4:15	20	214			36	191				
4:30	31	198			37	152				
4:45	29	204	96	839	30	167	123	677	219	1516
5:00	36	228			61	194				
5:15	51	226			86	172				
5:30	65	242			96	159				
5:45	50	218	202	914	84	164	327	689	529	1603
6:00	78	191			125	183				
6:15	91	234			131	166				
6:30	108	187			196	146				
6:45	149	173	426	785	188	165	640	660	1066	1445
7:00	147	138			192	142				
7:15	155	134			199	133				
7:30	158	146			236	120				
7:45	133	128	593	546	209	136	836	531	1429	1077
8:00	131	131			184	114				
8:15	108	108			156	93				
8:30	146	102			162	94				
8:45	106	91	491	432	177	102	679	403	1170	835
9:00	92	98			125	95				
9:15	86	91			115	61				
9:30	101	88			108	73				
9:45	85	77	364	354	106	63	454	292	818	646
10:00	89	65			97	64				
10:15	89	60			121	53				
10:30	106	50			100	43				
10:45	98	46	382	221	98	42	416	202	798	423
11:00	117	37			112	31				
11:15	111	44			114	16				
11:30	122	24			113	29				
11:45	131	26	481	131	107	20	446	96	927	227
Totals	3198	6616			4082	5693				
Combined Totals		9814				9775				
ADT										19589
AM Peak Hour	645	AM			700	AM				
Volume	609				836					
P.H.F.	0.964				0.886					
PM Peak Hour		500	PM			330	PM			
Volume		914				724				
P.H.F.		0.944				0.948				
Percentage	32.6%	67.4%			41.8%	58.2%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

River Road
B/ Riverview Way -Calle Montecito
9/20/2018

Start Time	9/20/2018
12:00 AM	106
1:00 AM	68
2:00 AM	65
3:00 AM	85
4:00 AM	219
5:00 AM	529
6:00 AM	1066
7:00 AM	1429
8:00 AM	1170
9:00 AM	818
10:00 AM	798
11:00 AM	927
12:00 PM	951
1:00 PM	957
2:00 PM	1167
3:00 PM	1462
4:00 PM	1516
5:00 PM	1603
6:00 PM	1445
7:00 PM	1077
8:00 PM	835
9:00 PM	646
10:00 PM	423
11:00 PM	227
Total	19589



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
River Road
B/ Calle Montecito - Redondo Drive

File Name 009
Site Code: 143-18669
24 Hour Directional Volume Count

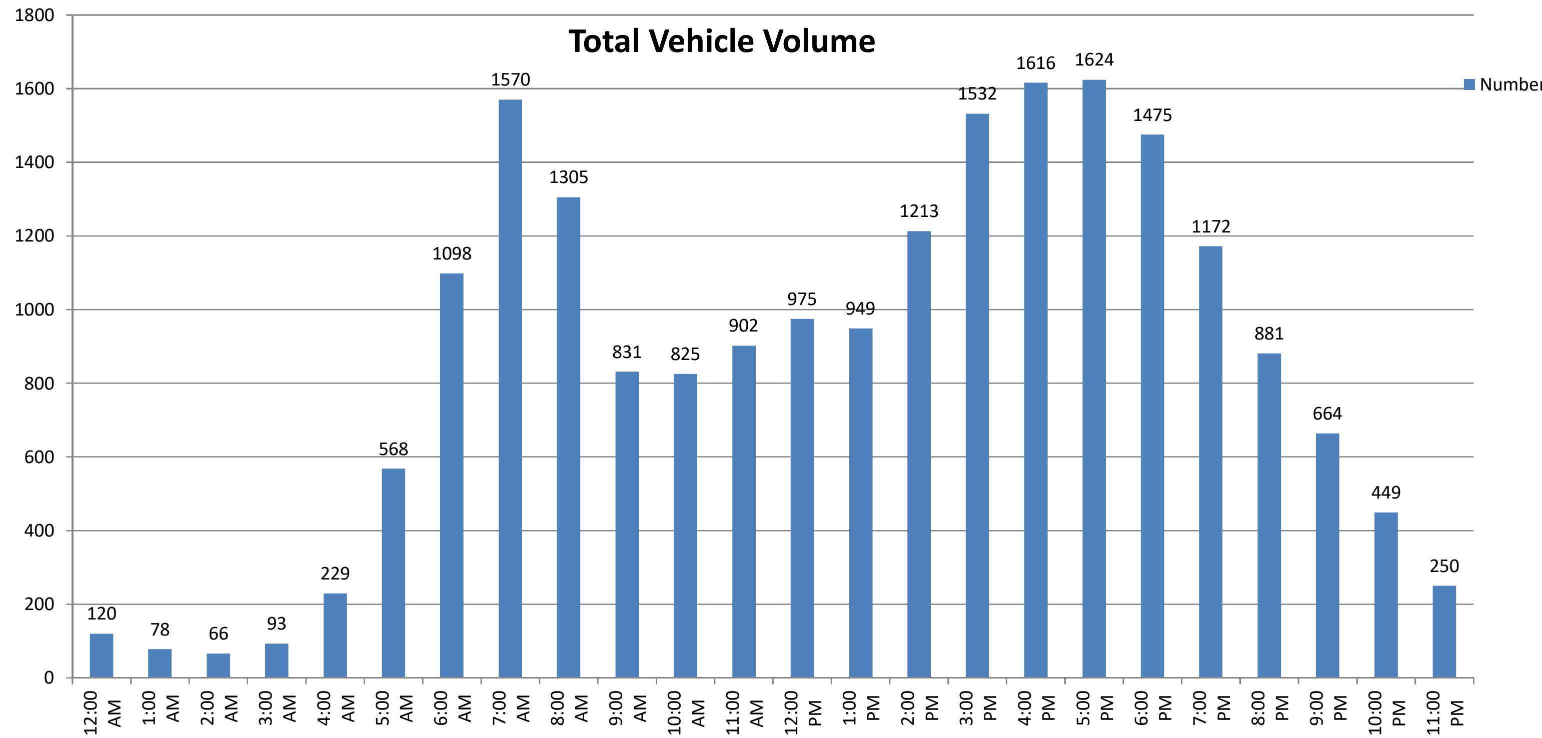
Date: 9/20/2018	Eastbound				Westbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals			
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	13	119			17	108				
12:15	18	117			13	116				
12:30	11	136			21	138				
12:45	13	120	55	492	14	121	65	483	120	975
1:00	8	116			13	123				
1:15	15	143			9	109				
1:30	7	110			7	113				
1:45	9	140	39	509	10	95	39	440	78	949
2:00	11	158			11	114				
2:15	8	137			7	128				
2:30	8	157			8	165				
2:45	3	189	30	641	10	165	36	572	66	1213
3:00	9	179			7	161				
3:15	10	198			11	170				
3:30	16	200			14	214				
3:45	11	204	46	781	15	206	47	751	93	1532
4:00	16	214			17	201				
4:15	31	205			30	199				
4:30	43	201			22	177				
4:45	40	226	130	846	30	193	99	770	229	1616
5:00	58	224			46	192				
5:15	67	211			56	198				
5:30	99	220			77	197				
5:45	98	208	322	863	67	174	246	761	568	1624
6:00	109	176			97	191				
6:15	124	246			117	180				
6:30	148	167			163	161				
6:45	202	163	583	752	138	191	515	723	1098	1475
7:00	218	149			169	157				
7:15	170	132			206	159				
7:30	182	141			237	154				
7:45	161	128	731	550	227	152	839	622	1570	1172
8:00	152	116			185	140				
8:15	122	108			168	108				
8:30	185	80			181	103				
8:45	123	104	582	408	189	122	723	473	1305	881
9:00	101	88			117	110				
9:15	99	79			110	70				
9:30	104	81			95	91				
9:45	94	69	398	317	111	76	433	347	831	664
10:00	100	60			95	88				
10:15	100	50			128	75				
10:30	92	44			95	55				
10:45	116	35	408	189	99	42	417	260	825	449
11:00	115	33			105	35				
11:15	113	39			109	28				
11:30	115	29			107	36				
11:45	126	21	469	122	112	29	433	128	902	250
Totals	3793	6470			3892	6330				
Combined Totals		10263				10222				
ADT										20485
AM Peak Hour	645	AM			715	AM				
Volume	772				855					
P.H.F.	0.885				0.902					
PM Peak Hour		445	PM			330	PM			
Volume		881				820				
P.H.F.		0.975				0.958				
Percentage	37.0%	63.0%			38.1%	61.9%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

River Road
B/ Calle Montecito - Redondo Drive
9/20/2018

Start Time	9/20/2018
12:00 AM	120
1:00 AM	78
2:00 AM	66
3:00 AM	93
4:00 AM	229
5:00 AM	568
6:00 AM	1098
7:00 AM	1570
8:00 AM	1305
9:00 AM	831
10:00 AM	825
11:00 AM	902
12:00 PM	975
1:00 PM	949
2:00 PM	1213
3:00 PM	1532
4:00 PM	1616
5:00 PM	1624
6:00 PM	1475
7:00 PM	1172
8:00 PM	881
9:00 PM	664
10:00 PM	449
11:00 PM	250
Total	20485



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
River Road
B/ Redondo Drive - College Boulevard

File Name 010
Site Code: 143-18669
24 Hour Directional Volume Count

Date:	Eastbound				Westbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	14	112			18	110				
12:15	18	116			17	110				
12:30	8	146			22	139				
12:45	12	115	52	489	15	118	72	477	124	966
1:00	6	113			15	127				
1:15	14	151			10	110				
1:30	8	110			7	109				
1:45	9	145	37	519	13	117	45	463	82	982
2:00	11	161			10	108				
2:15	8	139			7	138				
2:30	7	153			6	156				
2:45	3	180	29	633	10	168	33	570	62	1203
3:00	10	167			5	178				
3:15	8	169			10	160				
3:30	20	191			12	197				
3:45	12	220	50	747	13	210	40	745	90	1492
4:00	17	218			15	188				
4:15	33	214			22	201				
4:30	47	201			23	170				
4:45	46	211	143	844	29	204	89	763	232	1607
5:00	67	221			38	197				
5:15	76	208			48	207				
5:30	107	214			60	190				
5:45	103	206	353	849	67	177	213	771	566	1620
6:00	119	171			90	198				
6:15	131	212			100	194				
6:30	151	171			139	187				
6:45	205	165	606	719	121	173	450	752	1056	1471
7:00	254	151			156	167				
7:15	195	121			210	183				
7:30	161	145			229	152				
7:45	150	128	760	545	218	165	813	667	1573	1212
8:00	150	110			183	151				
8:15	139	99			172	120				
8:30	165	78			157	111				
8:45	124	108	578	395	145	120	657	502	1235	897
9:00	114	76			114	117				
9:15	101	72			97	87				
9:30	105	66			87	86				
9:45	102	57	422	271	111	95	409	385	831	656
10:00	99	52			100	96				
10:15	104	48			121	76				
10:30	92	41			90	68				
10:45	115	32	410	173	101	43	412	283	822	456
11:00	116	32			105	45				
11:15	110	38			119	24				
11:30	104	25			103	41				
11:45	122	20	452	115	116	28	443	138	895	253
Totals	3892	6299			3676	6516				
Combined Totals		10191				10192				
ADT										20383
AM Peak Hour	645	AM			715	AM				
Volume	815				840					
P.H.F.	0.802				0.917					
PM Peak Hour		445	PM			445	PM			
Volume		854				798				
P.H.F.		0.966				0.964				
Percentage	38.2%	61.8%			36.1%	63.9%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

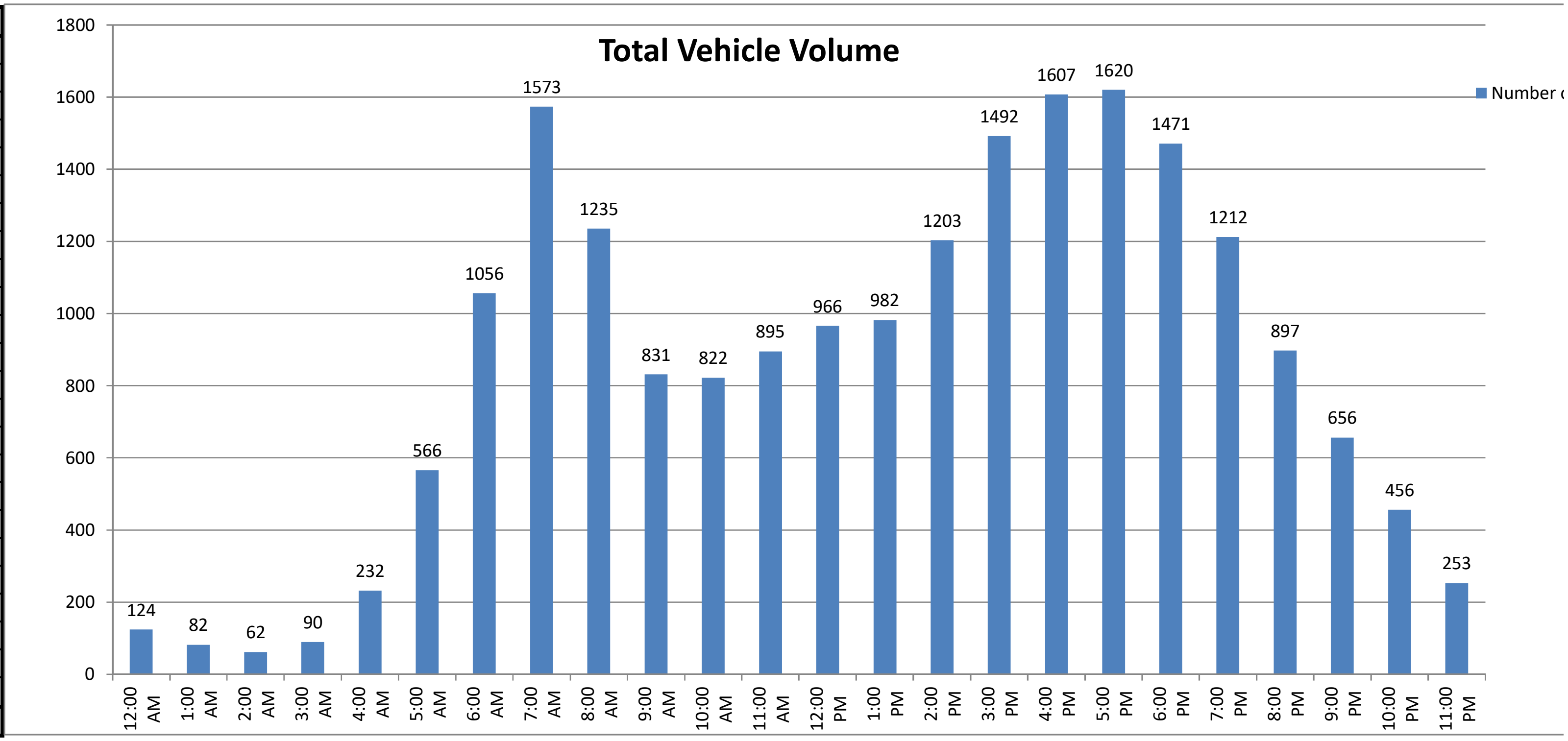
24 Hour Volume Plot

River Road

B/ Redondo Drive - College Boulevard

9/20/2018

Start Time	9/20/2018
12:00 AM	124
1:00 AM	82
2:00 AM	62
3:00 AM	90
4:00 AM	232
5:00 AM	566
6:00 AM	1056
7:00 AM	1573
8:00 AM	1235
9:00 AM	831
10:00 AM	822
11:00 AM	895
12:00 PM	966
1:00 PM	982
2:00 PM	1203
3:00 PM	1492
4:00 PM	1607
5:00 PM	1620
6:00 PM	1471
7:00 PM	1212
8:00 PM	897
9:00 PM	656
10:00 PM	456
11:00 PM	253
Total	20383



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
River Road
B/ Vandegrift Boulevard - College Boulevard

File Name 015
Site Code: 143-18669
24 Hour Directional Volume Count

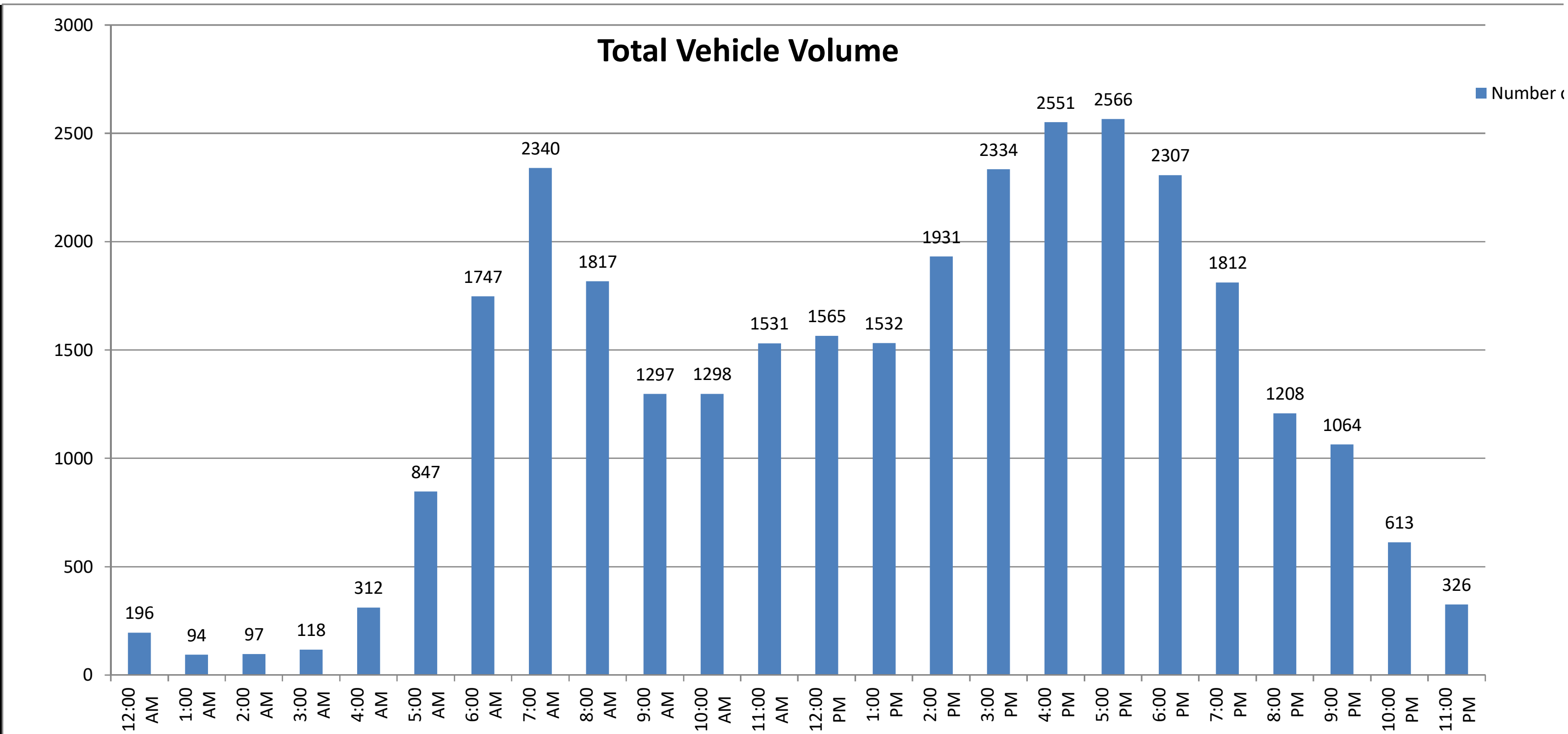
Date:	Northbound				Southbound					
9/26/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	53	225			14	191				
12:15	37	196			18	181				
12:30	29	195			10	189				
12:45	20	199	139	815	15	189	57	750	196	1565
1:00	23	218			9	199				
1:15	10	148			7	188				
1:30	10	196			16	198				
1:45	15	184	58	746	4	201	36	786	94	1532
2:00	15	184			8	229				
2:15	17	201			12	257				
2:30	12	287			11	213				
2:45	12	301	56	973	10	259	41	958	97	1931
3:00	8	294			7	254				
3:15	20	294			14	212				
3:30	12	328			19	311				
3:45	17	307	57	1223	21	334	61	1111	118	2334
4:00	17	317			29	314				
4:15	25	268			30	323				
4:30	39	362			52	327				
4:45	58	309	139	1256	62	331	173	1295	312	2551
5:00	65	364			81	312				
5:15	79	296			104	333				
5:30	129	337			146	325				
5:45	132	336	405	1333	111	263	442	1233	847	2566
6:00	165	335			158	277				
6:15	176	350			207	263				
6:30	247	281			235	258				
6:45	248	300	836	1266	311	243	911	1041	1747	2307
7:00	294	292			336	257				
7:15	303	318			305	241				
7:30	288	175			292	160				
7:45	235	200	1120	985	287	169	1220	827	2340	1812
8:00	210	216			271	154				
8:15	193	186			257	108				
8:30	192	185			255	112				
8:45	184	160	779	747	255	87	1038	461	1817	1208
9:00	145	236			183	152				
9:15	155	126			175	82				
9:30	147	167			164	89				
9:45	141	139	588	668	187	73	709	396	1297	1064
10:00	135	135			167	53				
10:15	139	98			181	46				
10:30	160	93			167	54				
10:45	177	91	611	417	172	43	687	196	1298	613
11:00	155	71			187	28				
11:15	188	64			201	27				
11:30	183	46			245	26				
11:45	202	39	728	220	170	25	803	106	1531	326
Totals	5516	10649			6178	9160				
Combined Totals		16165				15338				
ADT										31503
AM Peak Hour	645	AM			645	AM				
Volume	1133				1244					
P.H.F.	0.935				0.926					
PM Peak Hour		530	PM			430	PM			
Volume		1358				1303				
P.H.F.		0.970				0.978				
Percentage	34.1%	65.9%			40.3%	59.7%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

River Road
B/ Vandegrift Boulevard - College Boulevard
9/26/2018

Start Time	9/26/2018
12:00 AM	196
1:00 AM	94
2:00 AM	97
3:00 AM	118
4:00 AM	312
5:00 AM	847
6:00 AM	1747
7:00 AM	2340
8:00 AM	1817
9:00 AM	1297
10:00 AM	1298
11:00 AM	1531
12:00 PM	1565
1:00 PM	1532
2:00 PM	1931
3:00 PM	2334
4:00 PM	2551
5:00 PM	2566
6:00 PM	2307
7:00 PM	1812
8:00 PM	1208
9:00 PM	1064
10:00 PM	613
11:00 PM	326
Total	31503



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
College Boulevard
B/ River Road - Buchanon Park Access

File Name 011
Site Code: 143-18669
24 Hour Directional Volume Count

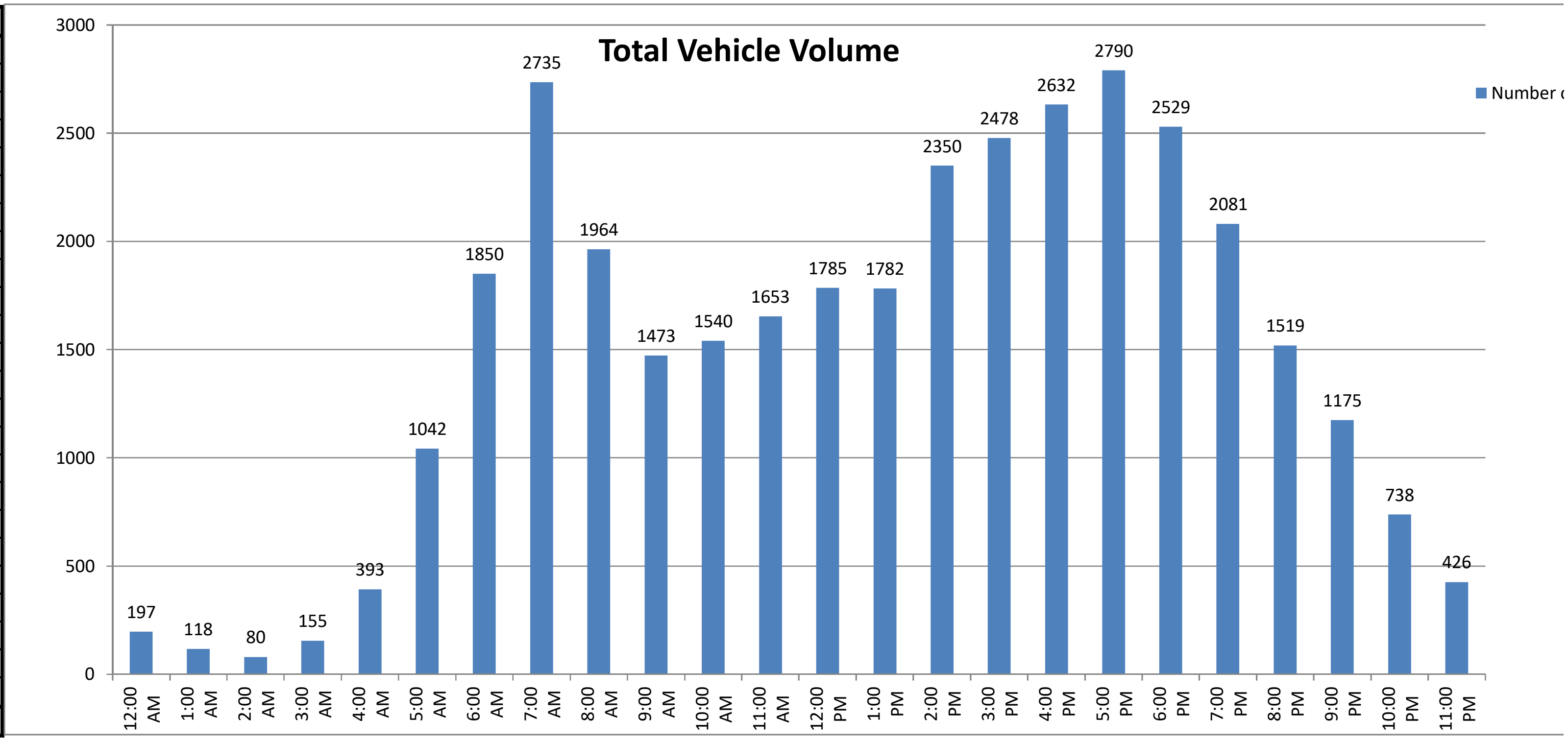
Date:	Northbound				Southbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	39	209			25	218				
12:15	30	229			20	233				
12:30	35	242			20	210				
12:45	21	231	125	911	7	213	72	874	197	1785
1:00	29	245			5	197				
1:15	19	196			14	266				
1:30	15	198			12	207				
1:45	15	219	78	858	9	254	40	924	118	1782
2:00	14	199			11	295				
2:15	6	266			10	358				
2:30	8	310			10	279				
2:45	8	375	36	1150	13	268	44	1200	80	2350
3:00	10	323			14	294				
3:15	14	335			15	291				
3:30	19	300			30	268				
3:45	21	308	64	1266	32	359	91	1212	155	2478
4:00	22	301			25	336				
4:15	26	320			46	343				
4:30	42	313			73	336				
4:45	55	315	145	1249	104	368	248	1383	393	2632
5:00	80	355			89	360				
5:15	93	381			123	351				
5:30	124	367			216	335				
5:45	149	338	446	1441	168	303	596	1349	1042	2790
6:00	134	354			174	330				
6:15	206	313			209	338				
6:30	237	296			294	231				
6:45	233	312	810	1275	363	355	1040	1254	1850	2529
7:00	305	340			461	244				
7:15	386	310			421	238				
7:30	323	251			304	215				
7:45	235	273	1249	1174	300	210	1486	907	2735	2081
8:00	217	264			310	170				
8:15	228	234			257	156				
8:30	213	213			297	116				
8:45	194	233	852	944	248	133	1112	575	1964	1519
9:00	147	206			228	129				
9:15	162	228			203	89				
9:30	154	187			218	95				
9:45	168	167	631	788	193	74	842	387	1473	1175
10:00	195	151			226	81				
10:15	169	118			192	75				
10:30	169	129			222	42				
10:45	165	92	698	490	202	50	842	248	1540	738
11:00	188	90			205	34				
11:15	193	87			230	42				
11:30	184	58			219	34				
11:45	208	55	773	290	226	26	880	136	1653	426
Totals	5907	11836			7293	10449				
Combined Totals		17743				17742				
ADT										35485
AM Peak Hour	700	AM			645	AM				
Volume	1249				1549					
P.H.F.	0.809				0.840					
PM Peak Hour		500	PM			430	PM			
Volume		1441				1415				
P.H.F.		0.946				0.961				
Percentage	33.3%	66.7%			41.1%	58.9%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

College Boulevard
B/ River Road - Buchanon Park Access
9/20/2018

Start Time	9/20/2018
12:00 AM	197
1:00 AM	118
2:00 AM	80
3:00 AM	155
4:00 AM	393
5:00 AM	1042
6:00 AM	1850
7:00 AM	2735
8:00 AM	1964
9:00 AM	1473
10:00 AM	1540
11:00 AM	1653
12:00 PM	1785
1:00 PM	1782
2:00 PM	2350
3:00 PM	2478
4:00 PM	2632
5:00 PM	2790
6:00 PM	2529
7:00 PM	2081
8:00 PM	1519
9:00 PM	1175
10:00 PM	738
11:00 PM	426
Total	35485



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
College Boulevard
B/ Buchanon Park Access - Adams Street

File Name 012
Site Code: 143-18669
24 Hour Directional Volume Count

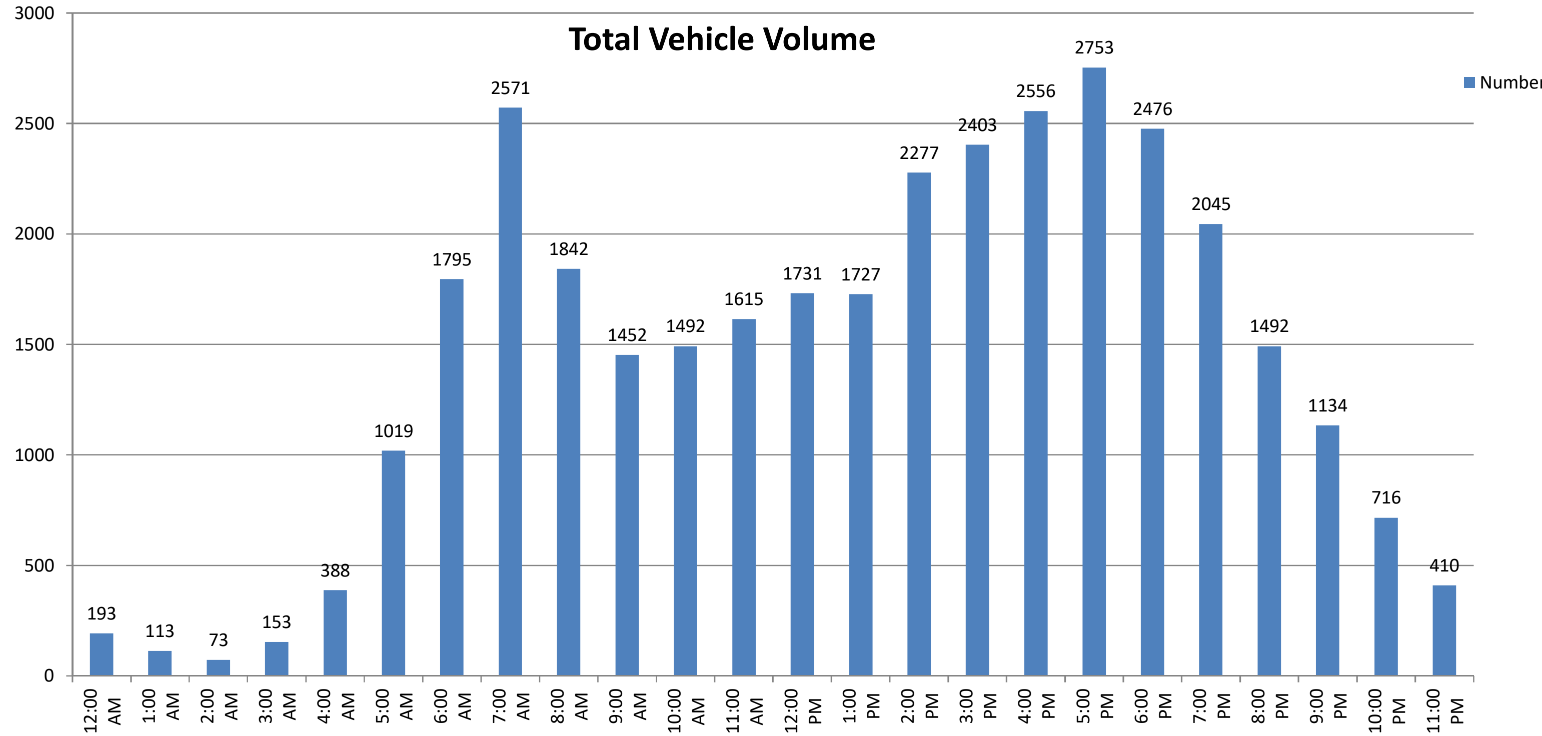
Date:	Northbound				Southbound					
9/20/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	42	210			25	225				
12:15	24	229			23	196				
12:30	38	229			16	210				
12:45	19	237	123	905	6	195	70	826	193	1731
1:00	27	228			5	215				
1:15	20	189			11	242				
1:30	15	197			12	200				
1:45	14	214	76	828	9	242	37	899	113	1727
2:00	12	206			9	279				
2:15	7	237			9	316				
2:30	8	300			10	277				
2:45	6	372	33	1115	12	290	40	1162	73	2277
3:00	11	316			14	245				
3:15	16	310			16	279				
3:30	19	305			32	277				
3:45	19	316	65	1247	26	355	88	1156	153	2403
4:00	20	305			28	286				
4:15	27	308			47	336				
4:30	42	323			76	317				
4:45	55	330	144	1266	93	351	244	1290	388	2556
5:00	82	365			88	338				
5:15	94	375			119	324				
5:30	126	346			203	332				
5:45	141	360	443	1446	166	313	576	1307	1019	2753
6:00	143	329			168	324				
6:15	201	309			213	317				
6:30	227	297			279	230				
6:45	234	336	805	1271	330	334	990	1205	1795	2476
7:00	275	323			421	264				
7:15	360	256			373	268				
7:30	295	247			288	230				
7:45	245	252	1175	1078	314	205	1396	967	2571	2045
8:00	192	254			280	164				
8:15	223	224			227	128				
8:30	210	210			287	131				
8:45	187	228	812	916	236	153	1030	576	1842	1492
9:00	160	197			225	118				
9:15	151	211			194	90				
9:30	168	193			206	91				
9:45	161	154	640	755	187	80	812	379	1452	1134
10:00	176	141			213	80				
10:15	177	126			203	69				
10:30	166	115			196	44				
10:45	151	94	670	476	210	47	822	240	1492	716
11:00	202	86			196	36				
11:15	177	83			203	41				
11:30	188	57			226	31				
11:45	196	54	763	280	227	22	852	130	1615	410
Totals	5749	11583			6957	10137				
Combined Totals		17332				17094				
ADT										34426
AM Peak Hour	700	AM			645	AM				
Volume	1175				1412					
P.H.F.	0.816				0.838					
PM Peak Hour		500	PM			445	PM			
Volume		1446				1345				
P.H.F.		0.964				0.958				
Percentage	33.2%	66.8%			40.7%	59.3%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

College Boulevard
B/ Buchanon Park Access - Adams Street
9/20/2018

Start Time	9/20/2018
12:00 AM	193
1:00 AM	113
2:00 AM	73
3:00 AM	153
4:00 AM	388
5:00 AM	1019
6:00 AM	1795
7:00 AM	2571
8:00 AM	1842
9:00 AM	1452
10:00 AM	1492
11:00 AM	1615
12:00 PM	1731
1:00 PM	1727
2:00 PM	2277
3:00 PM	2403
4:00 PM	2556
5:00 PM	2753
6:00 PM	2476
7:00 PM	2045
8:00 PM	1492
9:00 PM	1134
10:00 PM	716
11:00 PM	410
Total	34426



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
College Boulevard
B/ Adams Street - Via Cupeno

File Name 013
Site Code: 143-18669
24 Hour Directional Volume Count

Date: 9/20/2018	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals			
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	31	189			26	211				
12:15	44	219			21	217				
12:30	30	239			21	200				
12:45	35	256	140	903	14	227	82	855	222	1758
1:00	23	252			9	192				
1:15	24	219			8	242				
1:30	17	208			13	242				
1:45	19	220	83	899	7	213	37	889	120	1788
2:00	15	213			11	235				
2:15	14	194			8	283				
2:30	8	227			12	290				
2:45	12	289	49	923	12	252	43	1060	92	1983
3:00	7	362			14	264				
3:15	12	305			17	264				
3:30	14	294			22	233				
3:45	21	317	54	1278	31	283	84	1044	138	2322
4:00	15	300			34	306				
4:15	23	334			35	317				
4:30	27	289			50	331				
4:45	47	347	112	1270	104	328	223	1282	335	2552
5:00	64	336			85	338				
5:15	73	368			113	329				
5:30	84	386			158	308				
5:45	124	365	345	1455	218	313	574	1288	919	2743
6:00	132	358			194	287				
6:15	146	339			208	295				
6:30	196	331			258	290				
6:45	219	312	693	1340	279	271	939	1143	1632	2483
7:00	237	341			349	304				
7:15	254	328			368	259				
7:30	281	272			345	243				
7:45	284	275	1056	1216	318	225	1380	1031	2436	2247
8:00	202	261			310	201				
8:15	202	251			263	145				
8:30	190	224			242	129				
8:45	160	238	754	974	301	130	1116	605	1870	1579
9:00	164	234			234	155				
9:15	162	219			210	117				
9:30	160	227			211	77				
9:45	163	174	649	854	217	92	872	441	1521	1295
10:00	162	162			200	93				
10:15	200	143			205	80				
10:30	175	131			228	52				
10:45	166	109	703	545	192	52	825	277	1528	822
11:00	180	94			212	49				
11:15	213	98			212	35				
11:30	180	80			212	44				
11:45	189	53	762	325	223	20	859	148	1621	473
Totals	5400	11982			7034	10063				
Combined Totals		17382				17097				
ADT										34479
AM Peak Hour	700	AM			700	AM				
Volume	1056				1380					
P.H.F.	0.930				0.938					
PM Peak Hour		515	PM			430	PM			
Volume		1477				1326				
P.H.F.		0.957				0.981				
Percentage	31.1%	68.9%			41.1%	58.9%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

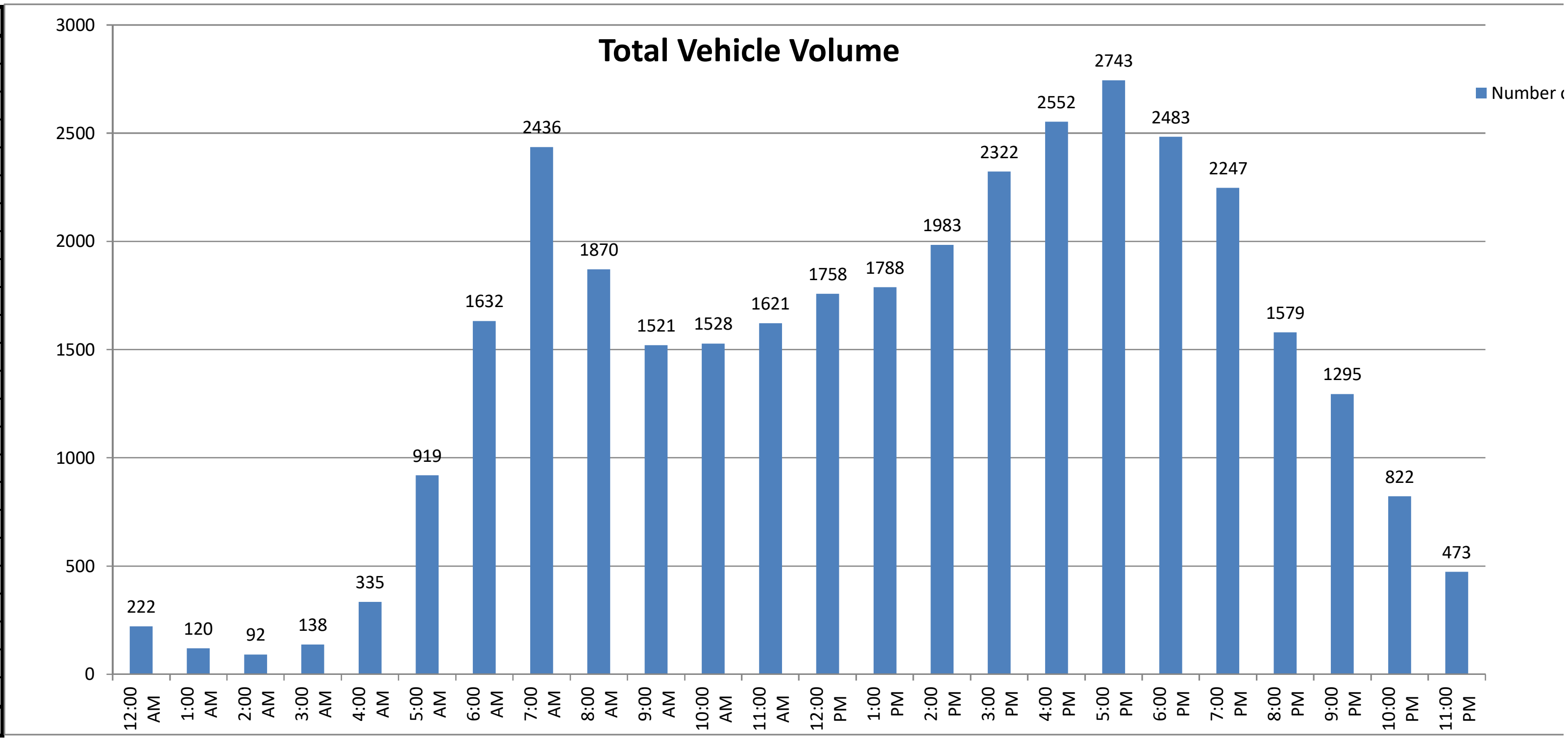
24 Hour Volume Plot

College Boulevard

B/ Adams Street - Via Cupeno

9/20/2018

Start Time	9/20/2018
12:00 AM	222
1:00 AM	120
2:00 AM	92
3:00 AM	138
4:00 AM	335
5:00 AM	919
6:00 AM	1632
7:00 AM	2436
8:00 AM	1870
9:00 AM	1521
10:00 AM	1528
11:00 AM	1621
12:00 PM	1758
1:00 PM	1788
2:00 PM	1983
3:00 PM	2322
4:00 PM	2552
5:00 PM	2743
6:00 PM	2483
7:00 PM	2247
8:00 PM	1579
9:00 PM	1295
10:00 PM	822
11:00 PM	473
Total	34479



Volumes represent the combined totals for both directions

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Oceanside
College Boulevard
B/ Via Cupeno - State Route 76

File Name 014
Site Code: 143-18669
24 Hour Directional Volume Count

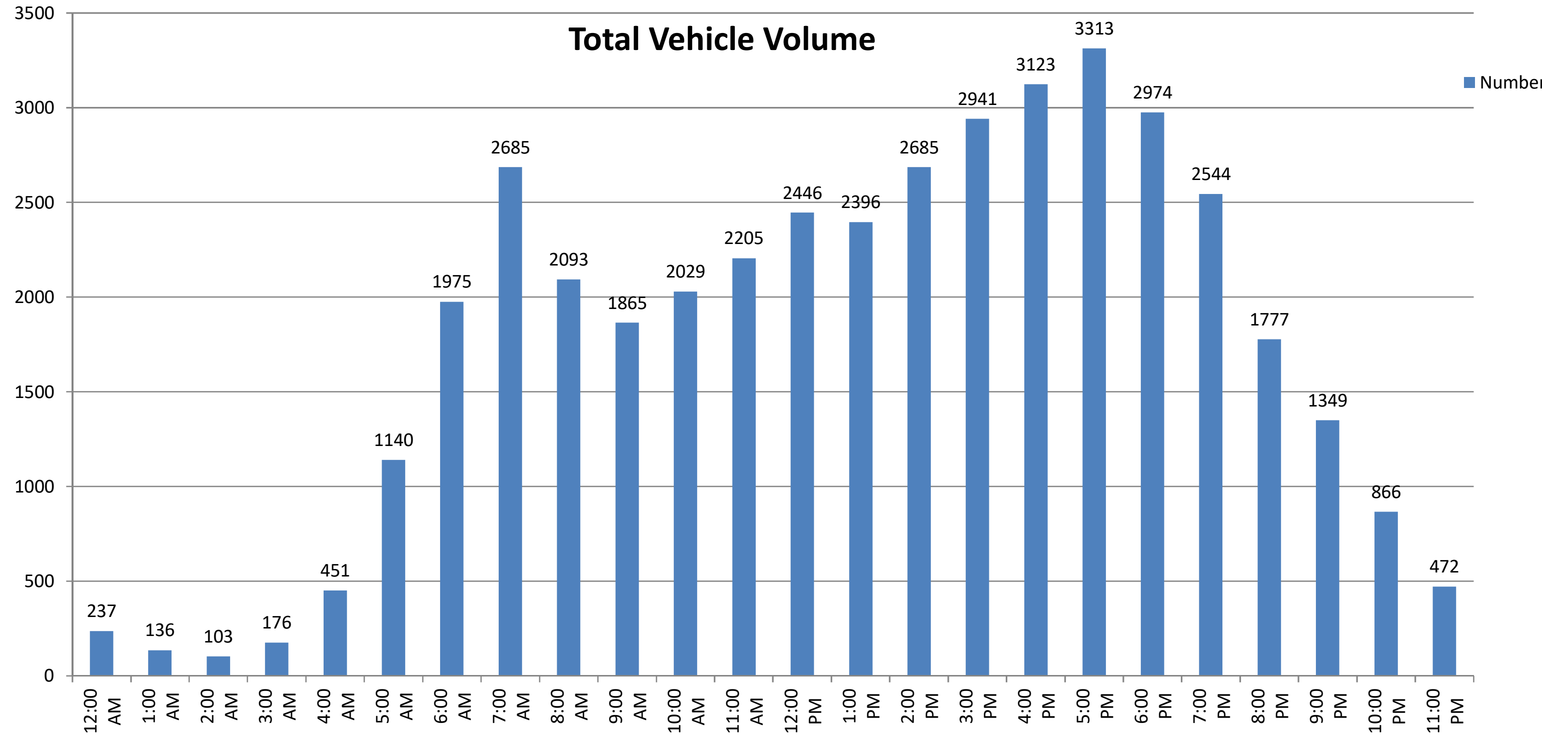
Date: 9/20/2018	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals			
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	48	305			29	288				
12:15	33	296			31	299				
12:30	47	331			18	317				
12:45	23	305	151	1237	8	305	86	1209	237	2446
1:00	29	299			7	329				
1:15	24	255			19	336				
1:30	18	257			13	311				
1:45	18	263	89	1074	8	346	47	1322	136	2396
2:00	22	264			12	342				
2:15	10	280			10	387				
2:30	12	323			19	352				
2:45	5	413	49	1280	13	324	54	1405	103	2685
3:00	12	422			14	328				
3:15	14	360			19	336				
3:30	23	396			33	336				
3:45	22	381	71	1559	39	382	105	1382	176	2941
4:00	23	369			31	385				
4:15	33	367			55	390				
4:30	50	416			89	395				
4:45	68	392	174	1544	102	409	277	1579	451	3123
5:00	74	435			103	413				
5:15	87	443			150	385				
5:30	128	440			255	402				
5:45	143	438	432	1756	200	357	708	1557	1140	3313
6:00	152	380			208	370				
6:15	211	373			255	421				
6:30	237	368			323	309				
6:45	239	378	839	1499	350	375	1136	1475	1975	2974
7:00	264	391			413	330				
7:15	332	302			409	342				
7:30	313	317			340	296				
7:45	277	290	1186	1300	337	276	1499	1244	2685	2544
8:00	244	285			301	219				
8:15	240	226			310	172				
8:30	209	247			322	184				
8:45	221	249	914	1007	246	195	1179	770	2093	1777
9:00	201	212			268	172				
9:15	212	241			254	128				
9:30	204	187			249	131				
9:45	213	166	830	806	264	112	1035	543	1865	1349
10:00	245	169			258	105				
10:15	230	139			266	97				
10:30	227	117			299	76				
10:45	231	98	933	523	273	65	1096	343	2029	866
11:00	253	94			293	45				
11:15	265	95			268	47				
11:30	276	65			291	37				
11:45	260	60	1054	314	299	29	1151	158	2205	472
Totals	6722	13899			8373	12987				
Combined Totals		20621				21360				
ADT										41981
AM Peak Hour	700	AM			645	AM				
Volume	1186				1512					
P.H.F.	0.893				0.915					
PM Peak Hour		500	PM			445	PM			
Volume		1756				1609				
P.H.F.		0.991				0.974				
Percentage	32.6%	67.4%			39.2%	60.8%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

24 Hour Volume Plot

College Boulevard
B/ Via Cupeno - State Route 76
9/20/2018

Start Time	9/20/2018
12:00 AM	237
1:00 AM	136
2:00 AM	103
3:00 AM	176
4:00 AM	451
5:00 AM	1140
6:00 AM	1975
7:00 AM	2685
8:00 AM	2093
9:00 AM	1865
10:00 AM	2029
11:00 AM	2205
12:00 PM	2446
1:00 PM	2396
2:00 PM	2685
3:00 PM	2941
4:00 PM	3123
5:00 PM	3313
6:00 PM	2974
7:00 PM	2544
8:00 PM	1777
9:00 PM	1349
10:00 PM	866
11:00 PM	472
Total	41981



Volumes represent the combined totals for both directions

CALTRANS 2017 VOLUMES

Dist	Route	County		Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
11	076	SD	R	3.389	OCEANSIDE, EL CAMINO REAL	4050	52000	47500	3650	44000	41500
11	076	SD	R	3.745	OCEANSIDE, DOUGLAS STREET	3650	44000	41500	3850	47500	46500
11	076	SD	R	4.211	OCEANSIDE, RANCHO DEL ORO	3250	40500	36500	3150	39500	36500
11	076	SD	R	5.597	OCEANSIDE, FRAZEE ROAD	3150	39500	36500	3800	47000	43500
11	076	SD	R	6.207	COLLEGE BOULEVARD	3600	44500	41000	4800	47500	46000
11	076	SD	R	6.721	OCEANSIDE, NORTH SANTA FE ROAD	4800	47500	46000	4550	51000	50000

LOCATION: **RTE 76 EXPRESSWAY @ DOUGLAS DRIVE - JONES RANCH ROAD**

CALTRANS C8 Version 3 DATE: 12/8/14

F PAGE

	INTERVAL	PHASE TIMING									PRE-EMPTION		F									
		1	2	3	4	5	6	7	8	9	E		FLAGS	1	2	3	4	5	6	7	8	
0	WALK		1			1	1	1	7	CLK RST	EV SEL	0	PERMIT		2			5	6	7	8	0
1	DONT WALK		1			1	1	1	37		RR1 CLR	15	RED LOCK									1
2	MIN GREEN		25			13	25	13	5		EVA DLY	0	YEL LOCK									2
3	TYPE 3 DET		255			0	255	0	0		EVA CLR	5	V RECALL		2				6			3
4	ADD/VEH		0.0			0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL									4
5	PASSAGE		6.3			3.0	6.3	2.0	3.0		EVB CLR	5	PED PHASES								8	5
6	MAX GAP		8.3			5.0	8.3	2.0	3.0		EVC DLY	0	RT OLA									6
7	MIN GAP		3.5			2.0	3.5	2.0	3.0		EVC CLR	5	RT OLB									7
8	MAX EXT		50			17	50	17	10		EVD DLY	0	DBL ENTRY									8
9	MAX 2		80			32	80			YR	EVD CLR	5	MAX 2 PHASES		2			5	6			9
A	MAX 3									MO	MAX EV	255	LAG PHASES	**READ ONLY**								A
B										DAY	RR2 CLR	15	RED REST									B
C	REDUCE BY		0.1			0.1	0.1	0.0	0.0	DOW			REST-IN-WALK									C
D	EVERY		1.0			1.0	1.0	1.0	1.0	HR			MAX 3 PHASES									D
E	**YELLOW**		5.5			3.7	5.5	4.1	4.1	MIN			YEL START UP		2				6			E
F	RED		2.5			2.0	2.5	2.0	2.0	SEC			FIRST PHASE							7		F
3.5	PED XING FT								149					1	2	3	4	5	6	7	8	
	BIKE XING FT		112			168	96	170														

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FC0	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FD0 TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

NOTES:

7/8 SPLIT

INTERNAL COUNT STATION

OLA = FZ 5

FZ 2 BIKE = 7 sec

FZ 6 BIKE = 6 sec

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

		CONTROL PLANS									Y-COORD			LAG PHASE		FLAGS									
		1	2	3	4	5	6	7	8	9		C	D	E		F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH	160	160	160	160	160	160		200	180						LAG FZ FREE		2				6		8	0
1	FZ1 GRN FCTR	0	0	0	0	0	0		0	0				GAPOUT CP1	1	LAG FZ CP 1		2			5			8	1
2														GAPOUT CP2	1	LAG FZ CP 2		2			5			8	2
3	FZ3 GRN FCTR	0	0	0	0	0	0		0	0				GAPOUT CP3	1	LAG FZ CP 3		2			5			8	3
4	FZ4 GRN FCTR	0	0	0	0	0	0		0	0	PERM TIME			GAPOUT CP4	0	LAG FZ CP 4		2				6		8	4
5	FZ5 GRN FCTR	30	30	45	30	30	45		45	45	LAG OFFSET			GAPOUT CP5	1	LAG FZ CP 5		2			5			8	5
6											FORCE OFF			GAPOUT CP6	0	LAG FZ CP 6		2				6		8	6
7	FZ7 GRN FCTR	13	13	13	13	13	13		13	13	LONG GRN			GAPOUT CP7		LAG FZ CP 7									7
8	FZ8 GRN FCTR	44	44	44	44	44	44		44	44	NO GREEN			GAPOUT CP8	1	LAG FZ CP 8		2			5			8	8
9	MULTI CYCLE	0	0	0	0	0	0		0	0				GAPOUT CP9	0	LAG FZ CP 9		2				6		8	9
A	OFFSET A	131	147	38	106	144	88		116	95	OFFSET					LAG C COORD									A
B	OFFSET B	131	147	38	106	144	88		116	95						LAG D COORD									B
C	OFFSET C	131	147	38	106	144	88		116	95						COORD FAZES		2				6			C
D	FZ 3 EXT																								D
E	FZ 7 EXT	22	22	22	22	22	22		22	22															E
F	OFFSET INTRPT																								F
																	1	2	3	4	5	6	7	8	

CO1 MANUAL CP
CO2 MASTER CP
CO3 CURRENT CP
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 76X @
COLLEGE BLVE

FEATURE	OFF	ON	LOCATION	OFF	ON
1			1		1
2			2		
3			3		
4			4		8
5			5		
6			6		
7			7		
8			8		

COO = 9

CCB/CDB OFFSET TIMER
CCC/CDC LAG GREEN TIMER
CCD/CDD FORCE OFF TIMER
CCE/CDE LONG GREEN TIMER
CCF/CDF NO GREEN TIMER

LOCATION: **RTE 76 EXPRESSWAY @ DOUGLAS DRIVE - JONES RANCH ROAD**

CALTRANS C8 Version 3 DATE: 8/13/10

D PAGE

	D MAX	1	2	3	4	5	6	7	8	E MIN	1	2	3	4	5	6	7	8	F PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1					5				CP 1								
2	CP 2									CP 2					5				CP 2								
3	CP 3									CP 3					5				CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8							7		CP 8								
9	CP 9									CP 9							7		CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

E PAGE

	E FUNCTION	1	2	3	4	5	6	7	8	F FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										C-RECALL									2
3										D-RECALL									3
4										EXCLUSIVE									4
5										2 PED		2							5
6										6 PED						6			6
7										4 PED				4					7
8										8 PED								8	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	

LAST POWER FAILURE REGISTER

HOUR = D-A-E
MINUTE = D-B-E
DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)
RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F
MINUTE = D-B-F
DAY = D-C-F

D-E-E = C8 VERSION NUMBER
D-E-F = LITHIUM BATTERY CONDITION
84 = BAD
85 = GOOD

LOCATION: **RTE 76 EXPRESSWAY @ DOUGLAS DRIVE - JONES RANCH ROAD**

CALTRANS C8 Version 3 DATE: 8/13/10

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
	HR	MIN	ACT	ON/ OFF	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	2	ON	1	2	3	4	5	6	7
1	21	00	2		1	2	3	4	5	6	7
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C	20	00	E	ON	1	2	3	4	5	6	7
D	05	30	E			2	3	4	5	6	
E											
F	09	00	E		1						7

ACTIVITY CODE

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED

7 ENERGIZE AUX OUTPUT-GREEN

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	1	A		2	3	4	5	6	
1											
2	09	00	2	A	1	2	3	4	5	6	7
3	14	00	3	A	1	2	3	4	5	6	7
4	14	45	9	A		2	3	4	5	6	
5	18	30	3	A		2	3	4	5	6	
6	20	00	E		1	2	3	4	5	6	7
7											
8											
9											
A											
B											
C											
D											
E											
F											

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

E PAGE

F+C+F+1+2+3+E+B+ E+PHASES or TYPE+EVENT NO.										
		PHASES		TYPE			PHASES		TYPE	
		C		D			E		F	
0	I1	1	5	5,6		J1	5		5,6	
1	I2U	2		5,6	7,8	J2U	6		5,6	
2	I2L	2		5,6	7,8	J2L	6		5,6	
3	I3U	2	5	5,6		J3U	6		5,6	
4	I3L	2	5	5	5,6	J3L	6		5	7,8
5	I4	2		7,8	5,6	J4	6		7,8	
6	I5	3	5	5,6		J5	7		5,6	
7	I6U	4	7	5,6		J6U	8		5,6	
8	I6L	4		5,6		J6L	8		5,6	
9	I7U	4	2	5,6		J7U	8		5,6	
A	I7L	4	2	5	5,6	J7L	8		5	
B	I8	4		7,8		J8	8		7,8	
C	I9U	1		5,6		J9U	5		5,6	
D	I9L	3		5,6		J9L	7		5,6	

REASSIGNS DETECTORS TO VARIOUS PHASES / FUNCTIONS

F-C-F MUST EQUAL ZERO WHEN FINISHED

LOWER CASE NUMBERS ARE DEFAULT VALUES

BLANK SPACES CONTAIN DEFAULTS (DO NOT ZERO OUT)

DETECTOR TYPE

1 RED LOCK
2 YELLOW LOCK
5 EXTENSION
6 COUNT
7 CALLING
8 TYPE 3 DISCONNECT

D PAGE

DETECTOR SETTINGS									
I FILE					J FILE				
	DELAY		CARRYOVER			DELAY		CARRYOVER	
I1	D10		D30		J1	D20	2.0	D40	1.0
I2U	D11		D31		J2U	D21		D41	
I2L	D12		D32		J2L	D22		D42	
I3U	D13		D33	1.0	J3U	D23		D43	
I3L	D14		D34	1.0	J3L	D24		D44	
I4	D15		D35		J4	D25		D45	
I5	D16	25.0	D36		J5	D26	2.0	D46	2.0
I6U	D17	2.0	D37		J6U	D27		D47	
I6L	D18		D38		J6L	D28		D48	
I7U	D19		D39		J7U	D29		D49	
I7L	D1A		D3A		J7L	D2A		D4A	
I8	D1B		D3B		J8	D2B		D4B	
I9U	D1C		D3C		J9U	D2C		D4C	
I9L	D1D		D3D		J9L	D2D		D4D	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	76	R2.2/R4.2	98	86

REGISTERED ELECTRICAL ENGINEER 01-28-09 DATE

3-30-09 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER MAHENDRA NIRMAL No. E 10689 Exp. 06-30-11 ELECTRICAL STATE OF CALIFORNIA

ADDITIONAL LEFT TURN LANE WITH REAR DETECTION

SEE SHEET E-6 FOR CONDUIT NOTES.

NOTES:

1 - ADD 1 VIDEO CABLE HARNESS(Ø6).

2 - ADD 1 VIDEO CABLE HARNESS (Ø2, Ø5).

3 - FURNISH AND INSTALL VDU, VIDEO DISPLAY, AND COMMUNICATION CARD IN CABINET.

4 - AB EXISTING LOOP DETECTORS.

5 - RC 3 dlc (Ø6).

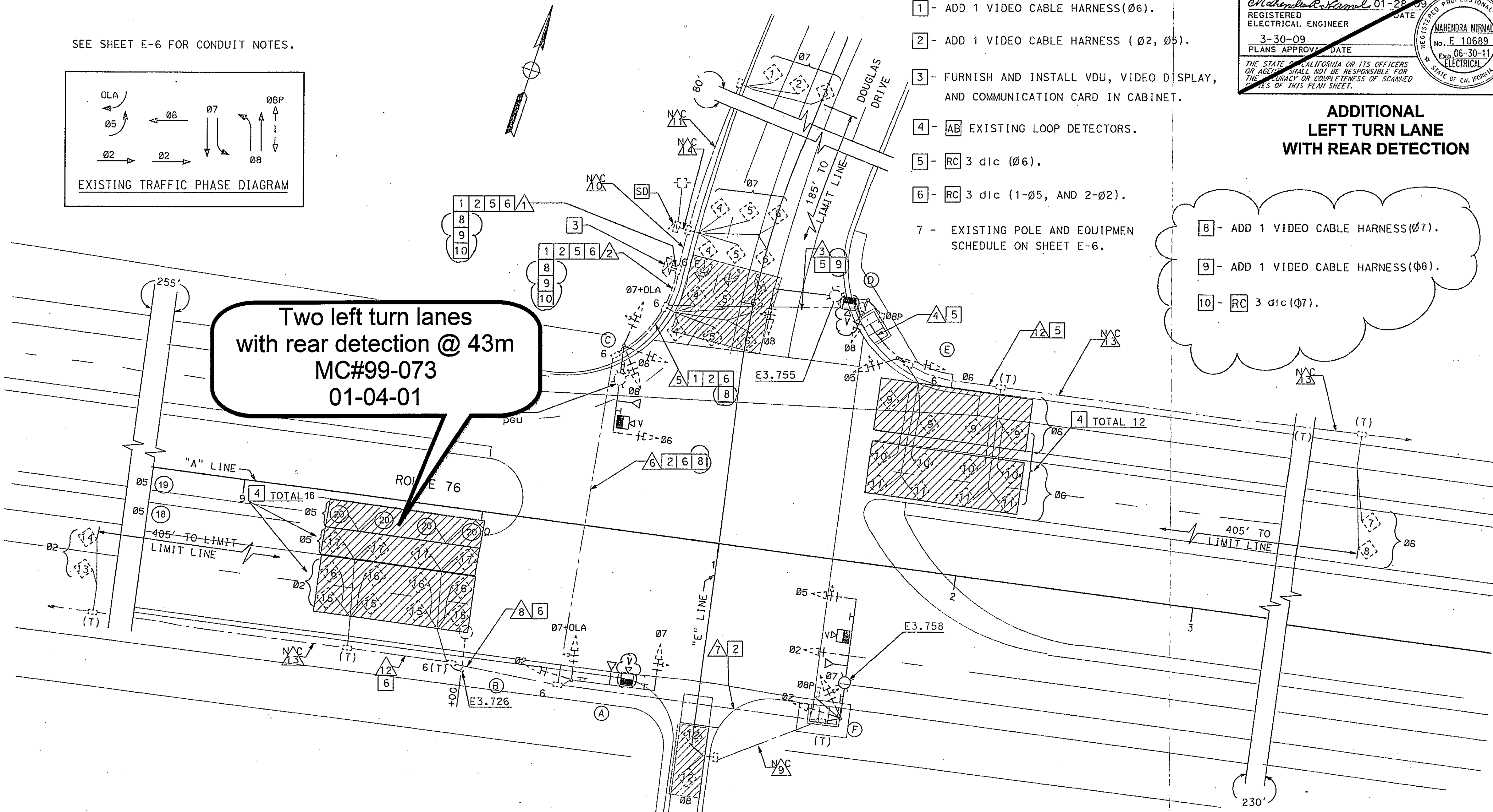
6 - RC 3 dlc (1-Ø5, AND 2-Ø2).

7 - EXISTING POLE AND EQUIPMEN SCHEDULE ON SHEET E-6.

8 - ADD 1 VIDEO CABLE HARNESS(Ø7).

9 - ADD 1 VIDEO CABLE HARNESS(Ø8).

10 - RC 3 dlc(Ø7).



SIGNAL No. P3.746
ROUTE 76 AT DOUGLAS DRIVE

11-259211	
CCO XX	
SHT	OF

MODIFY SIGNAL AND LIGHTING (LOCATION 3)

SCALE: 1" = 20'

E-5

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: DALE WILSON
CALCULATED-DESIGNED BY: MAHENDRA R. NIRMAL
CHECKED BY: ENRIQUE P. BERNAL
REVISED BY / DATE REVISED

LAST REVISION 02-22-10 DATE PLOTTED => 22-FEB-2010 TIME PLOTTED => 11:32

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => s108987
DGN FILE => b25921ua005C.dgn

CU 11233

EA 259211

INTERSECTION: Mission & Douglas

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **76**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **10/18/2018 9:41**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	**12**	<C+0+0>
Zone Number		<C+0+1>
Area Number	**1**	<C+0+2>
Area Address	**76**	<C+0+3>
QuicNet Channel	**Serial:COM40:**	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	**20**	<F+0+E>
Red Revert	**2.0**	<F+0+F>
All Red Start	**5.0**	<F+C+0>

Start / Revert Times

Row	*Column Numbers ---->*	1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	20	0	28	0	22	0	26
2	Min Green	5	8	5	8	5	8	5	8
3	Type 3 Limit	0	99	0	0	0	99	0	99
4	Added Initial	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0
5	Veh Extension	3.0	5.0	3.0	4.0	3.0	5.0	3.0	4.0
6	Max Gap	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
7	Min Gap	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	Max Limit	20	10	20	40	20	20	40	40
9	Max Limit 2	30	30	50	70	30	30	30	70
A	- - - - - -	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
D	Reduce Every	0.0	1.0	0.0	1.5	0.0	1.0	0.0	0.0
E	Yellow Change	4.1	4.8	4.1	4.4	4.1	4.8	4.1	4.4
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

	F	Row
Permit	12345678	0
Red Lock	________	1
Yellow Lock	________	2
Min Recall	___4___8	3
Ped Recall	________	4
View Set Peds	- - - - -	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2_4_6_8	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	__3_____	C
Man Cntrl Calls	________	D
Yellow Start	__3___7_	E
First Phases	___4___8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Row	Column Numbers ---->	1	2	3	4	5	6	7	8	9	Row
Row	Plan Name ---->										Row
0	Cycle Length	80	80	75	100	100	100	80	100	100	0
1	Phase 1 - ForceOff	65	65	60	65	65	65	65	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	25	25	23	25	25	25	25	25	25	3
4	Phase 4 - ForceOff	50	50	45	40	40	40	50	40	40	4
5	Phase 5 - ForceOff	65	65	60	65	65	65	65	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	25	25	25	1	25	25	7
8	Phase 8 - ForceOff	1	1	1	40	40	40	1	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	48	14	20	0	0	0	48	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	70	70	70	255	255	255	70	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination <C Page>

(* = Coordination Recall)

	E	Row
		0
Plan 1 - Sync	_2___6__	1
Plan 2 - Sync	_2___6__	2
Plan 3 - Sync	_2___6__	3
Plan 4 - Sync	_2___6__	4
Plan 5 - Sync	_2___6__	5
Plan 6 - Sync	_2___6__	6
Plan 7 - Sync	_2___6__	7
Plan 8 - Sync	_2___6__	8
Plan 9 - Sync	_2___6__	9
Coord Ped *	________	A
NEMA Hold	________	B
		C
		D
		E
		F

Sync Phases <C Page>

Row	Column Numbers ---->	E
0	Exclusive Phases	________
1	RR-1 Clear Phases	________
2	RR-2 Clear Phases	________
3	RR-2 Limited Service	________
4	Prot / Perm Phases	________
5	Overlap A - Green Omit	________
6	Overlap B - Green Omit	________
7	Overlap C - Green Omit	________
8	Overlap D - Green Omit	________
9	Overlap Yellow Flash	________
A	EV-A Phases	_2__5___
B	EV-B Phases	___4__7_
C	EV-C Phases	1____6__
D	EV-D Phases	__3____8
E	Extra 1 Config. Bits	1__4____
F	IC Select (Interconnect)	_2______

Configuration <E Page>

	F
RR Overlap A - Phases	________
RR Overlap B - Phases	________
RR Overlap C - Phases	________
RR Overlap D - Phases	________
Ped 2P	_2______
Ped 6P	_____6__
Ped 4P	___4____
Ped 8P	_______8
Yellow Flash Phases	________
Overlap A - Phases	________
Overlap B - Phases	________
Overlap C - Phases	________
Overlap D - Phases	________
Restricted Phases	________
Assign 5 Outputs	________

Configuration <E Page>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	F	Row
Free Lag	_2_4_6_8	0
Plan 1 - Lag	_2_4_6_8	1
Plan 2 - Lag	_2_4_6_8	2
Plan 3 - Lag	_2_4_6_8	3
Plan 4 - Lag	_2_4_6_8	4
Plan 5 - Lag	_2_4_6_8	5
Plan 6 - Lag	_2_4_6_8	6
Plan 7 - Lag	_2_4_6_8	7
Plan 8 - Lag	_2_4_6_8	8
Plan 9 - Lag	_2_4_6_8	9
Coord Max *	________	A
Coord Lag *	________	B
		C
		D
		E
		F

Lag Phases <C Page>

Row	Time	Plan	Offset	Day of Week	Time	Funct.	Day of Week	Column F Phases/Bits
0	00 : 00	0	0	_______	00 : 00	0	_______	_______
1	06 : 00	7	A	_______	00 : 00	0	_______	_______
2	09 : 00	2	A	_______	00 : 00	0	_______	_______
3	14 : 00	3	A	_______	00 : 00	0	_______	_______
4	19 : 00	E	A	_______	00 : 00	0	_______	_______
5	00 : 00	0	0	_______	00 : 00	0	_______	_______
6	00 : 00	0	0	_______	00 : 00	0	_______	_______
7	00 : 00	0	0	_______	00 : 00	0	_______	_______
8	00 : 00	0	0	_______	00 : 00	0	_______	_______
9	00 : 00	0	0	_______	00 : 00	0	_______	_______
A	00 : 00	0	0	_______	00 : 00	0	_______	_______
B	00 : 00	0	0	_______	00 : 00	0	_______	_______
C	00 : 00	0	0	_______	00 : 00	0	_______	_______
D	00 : 00	0	0	_______	00 : 00	0	_______	_______
E	00 : 00	0	0	_______	00 : 00	0	_______	_______
F	00 : 00	0	0	_______	00 : 00	0	_______	_______

TOD Coordination
<9 Key with C+D+9=0>

TOD Function
<7 Key>

<D Page>

Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Row
0	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	0
1	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	1
2	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	2
3	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	3
4	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	4
5	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	5
6	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	6
7	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	7
8	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	8
9	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	9
A	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	A
B	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	B
C	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	C
D	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	D
E	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	E
F	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______	F

Holiday # 1
TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2
TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3
TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector
OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	_______
B	Holiday # 2 Date	0	0	0	_______
C	Holiday # 3 Date	0	0	0	_______

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	- - -	- - -	- - -	- - -	- - -
F	- - -	- - -	- - -	- - -	- - -

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	- - -	- - -	- - -	- - -	- - -
F	- - -	- - -	- - -	- - -	- - -

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

Row	Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	- - - - - -	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8	Row
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
- - - - - -	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	- - -	0								A	<--- **Limited Service Interval** (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: Douglas & El Camino

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **96**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/22/2018 12:33**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	19	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	96	<C+0+3>
QuicNet Channel	Serial:COM40:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	5.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	7	0	0	0	7	0
1	Ped FDW	0	21	14	0	0	0	20	0
2	Min Green	5	10	6	6	5	10	4	4
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	2.0	0.0	0.0	0.0	1.0	0.0	0.0
5	Veh Extension	2.0	4.0	3.0	3.0	2.0	4.0	3.0	3.5
6	Max Gap	2.0	5.0	3.5	3.0	2.0	5.0	3.0	3.5
7	Min Gap	2.0	3.0	2.5	2.0	2.0	3.0	3.0	3.5
8	Max Limit	20	40	40	20	20	40	30	10
9	Max Limit 2	20	70	30	35	20	40	30	35
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0
D	Reduce Every	1.0	2.0	0.8	0.5	0.0	2.0	0.0	0.0
E	Yellow Change	4.4	5.2	4.4	4.1	4.4	5.2	3.0	4.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

	F	Row
Permit	12345678	0
Red Lock	________	1
Yellow Lock	________	2
Min Recall	_2___6__	3
Ped Recall	________	4
View Set Peds	- - - - -	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	________	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	________	C
Man Cntrl Calls	________	D
Yellow Start	__3_____	E
First Phases	_2___6__	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	90	90	100	100	100	100	100	100	100	0
1	Phase 1 - ForceOff	70	70	70	63	60	61	65	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	25	30	35	25	20	25	25	25	25	3
4	Phase 4 - ForceOff	35	35	40	40	40	40	40	40	40	4
5	Phase 5 - ForceOff	70	70	70	61	60	63	65	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	25	20	25	25	25	25	7
8	Phase 8 - ForceOff	55	55	55	40	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	21	0	65	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	255	255	255	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination <C Page>

(* = Coordination Recall)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync	2 6	4
Plan 5 - Sync	2 6	5
Plan 6 - Sync	2 6	6
Plan 7 - Sync	2 6	7
Plan 8 - Sync	2 6	8
Plan 9 - Sync	2 6	9
Coord Ped *		A
NEMA Hold		B
		C
		D
		E
		F

Sync Phases <C Page>

Row	Column Numbers --->	E
0	Exclusive Phases	34 7
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	8
C	EV-C Phases	1 6
D	EV-D Phases	4
E	Extra 1 Config. Bits	1 3
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	
Ped 4P	7
Ped 8P	3
Yellow Flash Phases	
Overlap A - Phases	3 6
Overlap B - Phases	3 8
Overlap C - Phases	2 7
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Configuration <E Page>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	F	Row
Free Lag	1 4 67	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Lag Phases <C Page>

Row	Time	Plan	Offset	Day of Week	Time	Funct	Day of Week	Column F Phases/Bits
0	00 : 00	0	0		00 : 00	0		
1	00 : 00	0	0		00 : 00	0		
2	00 : 00	0	0		00 : 00	0		
3	00 : 00	0	0		00 : 00	0		
4	00 : 00	0	0		00 : 00	0		
5	00 : 00	0	0		00 : 00	0		
6	00 : 00	0	0		00 : 00	0		
7	00 : 00	0	0		00 : 00	0		
8	00 : 00	0	0		00 : 00	0		
9	00 : 00	0	0		00 : 00	0		
A	00 : 00	0	0		00 : 00	0		
B	00 : 00	0	0		00 : 00	0		
C	00 : 00	0	0		00 : 00	0		
D	00 : 00	0	0		00 : 00	0		
E	00 : 00	0	0		00 : 00	0		
F	00 : 00	0	0		00 : 00	0		

TOD Coordination
<9 Key with C+D+9=0>

TOD Function
<7 Key>

<D Page>

Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week
0	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
1	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
2	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
3	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
4	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
5	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
6	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
7	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
8	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
9	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
A	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
B	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
C	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
D	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
E	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
F	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	

Holiday # 1
TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2
TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3
TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	2.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	7
B	Overlap B	0.0	4.3	0.0	3
C	Overlap C	0.0	5.0	0.0	2
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8
0	Ped Walk	0	4	4	0	0	0	4	0
1	Ped FDW	0	21	14	0	0	0	20	0
2	Min Green	5	10	5	5	5	10	4	4
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	2.0	0.0	0.0	0.0	1.0	0.0	0.0
5	Veh Extension	2.0	4.0	3.0	3.0	2.0	4.0	3.0	3.5
6	Max Gap	2.0	5.0	3.5	3.0	2.0	5.0	3.0	3.5
7	Min Gap	2.0	3.0	2.5	2.0	2.0	3.0	3.0	3.5
8	Max Limit	20	40	40	20	20	40	30	10
9	Max Limit 2	20	70	30	35	20	40	30	35
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0
D	Reduce Every	1.0	2.0	0.8	0.5	0.0	2.0	0.0	0.0
E	Yellow Change	3.2	5.0	4.3	4.0	3.2	5.0	3.0	4.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8	Row
Ped Walk	0	4	4	0	0	0	4	0	0
Ped FDW	0	21	14	0	0	0	20	0	1
Min Green	5	10	5	5	5	10	4	4	2
Type 3 Limit	0	99	0	0	0	99	0	0	3
Added Initial	0.0	2.0	0.0	0.0	0.0	1.0	0.0	0.0	4
Veh Extension	2.0	4.0	3.0	3.0	2.0	4.0	3.0	3.5	5
Max Gap	2.0	5.0	3.5	3.0	2.0	5.0	3.0	3.5	6
Min Gap	2.0	3.0	2.5	2.0	2.0	3.0	3.0	3.5	7
Max Limit	20	40	40	20	20	40	30	10	8
Max Limit 2	20	70	30	35	20	40	30	35	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	C
Reduce Every	1.0	2.0	0.8	0.5	0.0	2.0	0.0	0.0	D
Yellow Change	3.2	5.0	4.3	4.0	3.2	5.0	3.0	4.0	E
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: Douglas & Pala

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **95**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/26/2018 7:45**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	23	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	95	<C+0+3>
QuicNet Channel	Serial:COM40:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row		Phase							
	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	1	1	0	7	4	0
1	Ped FDW	0	10	1	1	0	18	20	0
2	Min Green	5	10	1	1	5	10	6	6
3	Type 3 Limit	0	99	1	1	0	99	0	0
4	Added Initial	0.0	1.0	0.0	1.2	0.0	1.0	0.0	0.0
5	Veh Extension	3.0	4.0	0.5	3.5	3.0	4.0	3.0	3.0
6	Max Gap	3.0	5.0	0.5	5.0	3.0	5.0	3.0	3.0
7	Min Gap	3.0	2.5	0.5	2.0	3.0	2.5	3.0	3.0
8	Max Limit	20	60	17	40	5	60	30	30
9	Max Limit 2	0	0	30	70	5	0	0	0
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0
D	Reduce Every	0.0	1.5	1.0	1.0	0.0	1.5	0.0	0.0
E	Yellow Change	4.4	5.2	3.0	4.0	4.4	5.2	4.1	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

	F	Row
Permit	12__5678	0
Red Lock	______	1
Yellow Lock	______	2
Min Recall	_2__6_	3
Ped Recall	______	4
View Set Peds	-----	5
Rest In Walk	______	6
Red Rest	______	7
Dual Entry	_2__6_	8
Max Recall	______	9
Soft Recall	______	A
Max 2	______	B
Cond. Service	______	C
Man Cntrl Calls	______	D
Yellow Start	_2__6_	E
First Phases	______8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	100	100	100	100	100	100	100	0
1	Phase 1 - ForceOff	73	73	73	65	65	65	65	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	0	0	0	25	25	25	25	25	25	3
4	Phase 4 - ForceOff	0	0	0	40	40	40	40	40	40	4
5	Phase 5 - ForceOff	73	73	73	65	65	65	65	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	33	33	33	25	25	25	25	25	25	7
8	Phase 8 - ForceOff	53	53	53	40	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	43	15	39	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	5	5	5	12	12	12	12	12	0	D
E	Hold Release	90	85	90	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	2 6
5	Plan 5 - Sync	2 6
6	Plan 6 - Sync	2 6
7	Plan 7 - Sync	2 6
8	Plan 8 - Sync	2 6
9	Plan 9 - Sync	2 6
A	Coord Ped *	
B	NEMA Hold	
C		
D		
E		
F		

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	7
C	EV-C Phases	1 6
D	EV-D Phases	8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	7
Ped 8P	
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	0

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

Row		F
0	Free Lag	2 4 6 8
1	Plan 1 - Lag	2 4 6 8
2	Plan 2 - Lag	2 4 6 8
3	Plan 3 - Lag	2 4 6 8
4	Plan 4 - Lag	2 4 6 8
5	Plan 5 - Lag	2 4 6 8
6	Plan 6 - Lag	2 4 6 8
7	Plan 7 - Lag	2 4 6 8
8	Plan 8 - Lag	2 4 6 8
9	Plan 9 - Lag	2 4 6 8
A	Coord Max *	
B	Coord Lag *	
C		
D		
E		
F		

Row	Time	Plan	Offset	Day of Week	Time	Funct	Day of Week	Column F Phases/Bits
0	00 : 00	0	0		00 : 00	0		
1	06 : 00	1	A	23456	00 : 00	0		
2	09 : 00	2	A	23456	00 : 00	0		
3	15 : 00	3	A	23456	00 : 00	0		
4	19 : 00	E	A	23456	00 : 00	0		
5	00 : 00	0	0		00 : 00	0		
6	00 : 00	0	0		00 : 00	0		
7	00 : 00	0	0		00 : 00	0		
8	00 : 00	0	0		00 : 00	0		
9	00 : 00	0	0		00 : 00	0		
A	00 : 00	0	0		00 : 00	0		
B	00 : 00	0	0		00 : 00	0		
C	00 : 00	0	0		00 : 00	0		
D	00 : 00	0	0		00 : 00	0		
E	00 : 00	0	0		00 : 00	0		
F	00 : 00	0	0		00 : 00	0		

TOD Coordination
<9 Key with C+D+9=0>

TOD Function
<7 Key>

<D Page>

Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week
0	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
1	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
2	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
3	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
4	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
5	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
6	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
7	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
8	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
9	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
A	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
B	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
C	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
D	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
E	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
F	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	

Holiday # 1 TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2 TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3 TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	10.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	12.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie. all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

INTERSECTION: Douglas & Pala

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: Douglas & Old River

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **77**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/22/2018 12:32**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	8	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	76	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	6	0	7	0	6
1	Ped FDW	0	15	0	26	0	15	0	26
2	Min Green	5	8	3	6	3	8	3	6
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	4.0	0.5	3.0	0.5	4.0	0.5	3.0
6	Max Gap	2.0	5.0	0.5	3.0	0.5	5.0	0.5	3.0
7	Min Gap	2.0	2.5	0.5	3.0	0.5	2.5	0.5	3.0
8	Max Limit	20	40	17	20	17	40	17	20
9	Max Limit 2	30	0	30	20	30	0	30	15
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0
D	Reduce Every	0.0	1.5	1.0	0.0	1.0	1.5	1.0	0.0
E	Yellow Change	4.4	5.2	3.0	3.6	3.0	5.2	3.0	3.6
F	Red Clear	1.0	1.5	0.0	1.0	0.0	1.5	0.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

	F	Row
Permit	12_4_6_8	0
Red Lock	______8	1
Yellow Lock	______8	2
Min Recall	_2__6__	3
Ped Recall	________	4
View Set Peds	- - - - -	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2_4_6_8	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	________	C
Man Cntrl Calls	________	D
Yellow Start	_2__6__	E
First Phases	___4__8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	100	100	90	90	100	100	100	0
1	Phase 1 - ForceOff	47	10	40	40	50	50	50	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	1	1	1	1	25	25	3
4	Phase 4 - ForceOff	37	45	32	32	30	30	30	40	40	4
5	Phase 5 - ForceOff	1	1	1	1	1	1	1	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	1	1	25	25	7
8	Phase 8 - ForceOff	37	45	32	32	30	30	30	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	23	95	19	19	60	73	20	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	5	5	5	5	12	12	12	12	12	D
E	Hold Release	90	85	90	90	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination <C Page>

(* = Coordination Recall)

		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	Coord Ped *		A
B	NEMA Hold		B
C			C
D			D
E			E
F			F

Sync Phases <C Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Configuration <E Page>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	1 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Lag Phases <C Page>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	06 : 00	1	A	23456
2	09 : 00	2	A	23456
3	15 : 00	3	A	23456
4	19 : 00	E	A	23456
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Row	Time	Funct.	Day of Week	Column F Phases/Bits
0	00 : 00	0		
1	00 : 00	0		
2	00 : 00	0		
3	00 : 00	0		
4	00 : 00	0		
5	00 : 00	0		
6	00 : 00	0		
7	00 : 00	0		
8	00 : 00	0		
9	00 : 00	0		
A	00 : 00	0		
B	00 : 00	0		
C	00 : 00	0		
D	00 : 00	0		
E	00 : 00	0		
F	00 : 00	0		

TOD Function
<7 Key>

<D Page>

Row	Holiday # 1 Time	Plan	Offset	Day of Week	Holiday # 2 Time	Plan	Offset	Day of Week	Holiday # 3 Time	Plan	Offset	Day of Week
0	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
1	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
2	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
3	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
4	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
5	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
6	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
7	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
8	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
9	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
A	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
B	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
C	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
D	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
E	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
F	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	

Holiday # 1 TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2 TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3 TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector
OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Printed on 10/4/2021 5:13 PM

Timing Sheet Version: 200 SA & CA

Revision: 10430

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	12.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	2.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	12.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	2.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers ---> / Phase Names --->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers ---> / Phase Names --->	Phase 1	2	3	4	5	6	7	8	Row
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: Douglas & North River

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **78**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/22/2018 12:32**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Communication Addresses

Drop Number	9	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	77	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Manual Selection

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Start / Revert Times

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Phase Timing - Bank 1 <F Page>

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	27	0	25	0	26	0	30
2	Min Green	5	8	3	8	5	8	0	8
3	Type 3 Limit	0	99	0	99	0	99	3	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
5	Veh Extension	3.0	5.0	3.0	5.0	3.0	5.0	3.0	3.5
6	Max Gap	3.0	6.0	3.0	6.0	3.0	6.0	3.0	5.0
7	Min Gap	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5
8	Max Limit	15	40	30	40	20	40	25	20
9	Max Limit 2	30	70	30	70	30	70	25	40
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
D	Reduce Every	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
E	Yellow Change	4.4	5.2	3.0	4.8	4.4	5.2	3.0	4.4
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Preempt Timing

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	10
EV-B Delay	0
EV-B Clear	10
EV-C Delay	0
EV-C Clear	15
EV-D Delay	0
EV-D Clear	15
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Phase Functions <F Page>

	F	Row
Permit	12_456_8	0
Red Lock		1
Yellow Lock	12__56_8	2
Min Recall	_2___6__	3
Ped Recall		4
View Set Peds	- - - - -	5
Rest In Walk		6
Red Rest		7
Dual Entry	_2___6__	8
Max Recall		9
Soft Recall		A
Max 2		B
Cond. Service		C
Man Cntrl Calls		D
Yellow Start	_2___6__	E
First Phases	___4___	F

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

(* = Coordination Recall)

Row	Column Numbers ---> / Plan Name --->	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Row
0	Cycle Length	100	100	100	100	90	90	100	100	100	0
1	Phase 1 - ForceOff	75	75	75	75	70	70	75	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	1	1	1	1	25	25	3
4	Phase 4 - ForceOff	35	40	35	35	30	30	35	40	40	4
5	Phase 5 - ForceOff	75	75	80	75	70	70	75	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	1	1	25	25	7
8	Phase 8 - ForceOff	56	56	56	56	50	50	60	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	31	11	31	31	44	41	70	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	5	12	12	12	12	0	D
E	Hold Release	95	85	100	90	80	80	90	0	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination <C Page>

		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	Coord Ped *		A
B	NEMA Hold		B
C			C
D			D
E			E
F			F

Sync Phases <C Page>

Row	Column Numbers --->	E
0	Exclusive Phases	34 78
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	12 56 8
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	4
Restricted Phases	
Assign 5 Outputs	

Configuration <E Page>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	8

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Lag Phases <C Page>

Row	Time	Plan	Offset	Day of Week	Time	Funct	Day of Week	Column F Phases/Bits
0	00 : 00	0	0		00 : 00	0		
1	06 : 00	1	A		00 : 00	0		
2	09 : 00	2	A		00 : 00	0		
3	15 : 00	3	A		00 : 00	0		
4	19 : 00	E	A		00 : 00	0		
5	00 : 00	0	0		00 : 00	0		
6	00 : 00	0	0		00 : 00	0		
7	00 : 00	0	0		00 : 00	0		
8	00 : 00	0	0		00 : 00	0		
9	00 : 00	0	0		00 : 00	0		
A	00 : 00	0	0		00 : 00	0		
B	00 : 00	0	0		00 : 00	0		
C	00 : 00	0	0		00 : 00	0		
D	00 : 00	0	0		00 : 00	0		
E	00 : 00	0	0		00 : 00	0		
F	00 : 00	0	0		00 : 00	0		

TOD Coordination <9 Key with C+D+9=0> — **TOD Function** <7 Key> — <D Page>

Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Row
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		0
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		1
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		2
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		3
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		4
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		5
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		6
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		7
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		8
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		9
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		A
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		B
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		C
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		D
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		E
00 : 00	0	0		00 : 00	0	0		00 : 00	0	0		F

Holiday # 1 TOD Coordination <9 Key with C+D+9=1> — **Holiday # 2 TOD Coordination** <9 Key with C+D+9=2> — **Holiday # 3 TOD Coordination** <9 Key with C+D+9=3>

<u>Plan Select</u>
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

<u>Offset Select</u>
A = Offset A
B = Offset B
C = Offset C

<u>T.O.D. Functions</u>
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest in Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

<u>Month Select</u>
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	1.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	7

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

INTERSECTION: Douglas & North River

Phase Timing - Bank 2 <F Page>

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	22	0	24	0	20	0	20
2	Min Green	3	10	3	8	0	10	0	8
3	Type 3 Limit	0	99	0	99	3	99	3	99
4	Added Initial	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
5	Veh Extension	3.0	5.0	3.0	4.0	3.0	5.0	3.0	4.0
6	Max Gap	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
7	Min Gap	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	Max Limit	25	45	30	40	25	45	25	40
9	Max Limit 2	30	70	30	70	30	70	25	40
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
D	Reduce Every	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
E	Yellow Change	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <F Page>

Column Numbers --->	Phase 1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	22	0	24	0	20	0	20	1
Min Green	3	10	3	8	0	10	0	8	2
Type 3 Limit	0	99	0	99	3	99	3	99	3
Added Initial	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0	4
Veh Extension	3.0	5.0	3.0	4.0	3.0	5.0	3.0	4.0	5
Max Gap	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	6
Min Gap	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	7
Max Limit	25	45	30	40	25	45	25	40	8
Max Limit 2	30	70	30	70	30	70	25	40	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	C
Reduce Every	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5	D
Yellow Change	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5	E
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	F

Special Event Schedule <C Page with F+9+F=22>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9	Limited Service	0	0								9	
A	Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

INTERSECTION: North River & Ave Descanso

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **79**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **8/8/2017 10:55**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	10	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	78	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	6	0	7	0	6
1	Ped FDW	0	12	0	25	0	12	0	25
2	Min Green	5	8	3	6	5	8	3	6
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	3.0	3.5	0.5	2.0	3.0	3.5	0.5	2.0
6	Max Gap	3.0	5.0	0.5	2.0	3.0	5.0	0.5	2.0
7	Min Gap	3.0	2.0	0.5	2.0	3.0	2.0	0.5	2.0
8	Max Limit	20	40	17	25	20	40	17	25
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
E	Yellow Change	4.1	4.8	3.0	3.6	4.1	4.8	3.0	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

	F	Row
Permit	12_456_8	0
Red Lock	1_______	1
Yellow Lock	1_______	2
Min Recall	_2___6__	3
Ped Recall	________	4
View Set Peds	- - - - -	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2_4_6_8	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	________	C
Man Cntrl Calls	________	D
Yellow Start	_2___6__	E
First Phases	___4___8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	100	100	90	90	100	100	100	0
1	Phase 1 - ForceOff	46	16	55	55	50	50	50	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	1	1	1	1	25	25	3
4	Phase 4 - ForceOff	30	45	45	45	30	30	30	40	40	4
5	Phase 5 - ForceOff	46	16	15	15	50	50	50	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	1	1	25	25	7
8	Phase 8 - ForceOff	30	45	45	45	30	30	30	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	65	50	53	53	6	53	52	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	5	20	20	5	12	12	12	12	12	D
E	Hold Release	90	85	90	90	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	2 6
5	Plan 5 - Sync	2 6
6	Plan 6 - Sync	2 6
7	Plan 7 - Sync	2 6
8	Plan 8 - Sync	2 6
9	Plan 9 - Sync	2 6
A	Coord Ped *	
B	NEMA Hold	
C		
D		
E		
F		

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	2
6	Ped 6P	6
7	Ped 4P	4
8	Ped 8P	8
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

Row		F
0	Free Lag	2 4 6 8
1	Plan 1 - Lag	2 4 6 8
2	Plan 2 - Lag	1 45 8
3	Plan 3 - Lag	2 45 8
4	Plan 4 - Lag	2 45 8
5	Plan 5 - Lag	2 4 6 8
6	Plan 6 - Lag	2 4 6 8
7	Plan 7 - Lag	2 4 6 8
8	Plan 8 - Lag	2 4 6 8
9	Plan 9 - Lag	2 4 6 8
A	Coord Max *	
B	Coord Lag *	
C		
D		
E		
F		

Row	Time	Plan	Offset	Day of Week	Time	Funct	Day of Week	Column F Phases/Bits
0	00:00	0	0		00:00	0		
1	06:00	1	A	23456	00:00	0		
2	09:00	E	A	23456	00:00	0		
3	11:00	2	A	23456	00:00	0		
4	13:00	E	A	23456	00:00	0		
5	15:00	3	A	23456	00:00	0		
6	19:00	E	A	23456	00:00	0		
7	00:00	0	0		00:00	0		
8	00:00	0	0		00:00	0		
9	00:00	0	0		00:00	0		
A	00:00	0	0		00:00	0		
B	00:00	0	0		00:00	0		
C	00:00	0	0		00:00	0		
D	00:00	0	0		00:00	0		
E	00:00	0	0		00:00	0		
F	00:00	0	0		00:00	0		

TOD Coordination <9 Key with C+D+9=0>

TOD Function <7 Key>

<D Page>

Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Row
00:00	0	0		00:00	0	0		00:00	0	0		0
00:00	0	0		00:00	0	0		00:00	0	0		1
00:00	0	0		00:00	0	0		00:00	0	0		2
00:00	0	0		00:00	0	0		00:00	0	0		3
00:00	0	0		00:00	0	0		00:00	0	0		4
00:00	0	0		00:00	0	0		00:00	0	0		5
00:00	0	0		00:00	0	0		00:00	0	0		6
00:00	0	0		00:00	0	0		00:00	0	0		7
00:00	0	0		00:00	0	0		00:00	0	0		8
00:00	0	0		00:00	0	0		00:00	0	0		9
00:00	0	0		00:00	0	0		00:00	0	0		A
00:00	0	0		00:00	0	0		00:00	0	0		B
00:00	0	0		00:00	0	0		00:00	0	0		C
00:00	0	0		00:00	0	0		00:00	0	0		D
00:00	0	0		00:00	0	0		00:00	0	0		E
00:00	0	0		00:00	0	0		00:00	0	0		F

Holiday # 1 TOD Coordination <9 Key with C+D+9=1>

Holiday # 2 TOD Coordination <9 Key with C+D+9=2>

Holiday # 3 TOD Coordination <9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates <8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	2.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	12.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	12.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	2.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	2.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	2.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

INTERSECTION: North River & Ave Descanso

Row	Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8
		Phase							
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8	Row
	Phase								
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9	Limited Service	0	0								9	
A	Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: N River & Calle Montecito

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **80**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **8/8/2017 10:55**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Communication Addresses

Drop Number	11	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	76	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Manual Selection

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Start / Revert Times

Max Initial	30	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Phase Timing - Bank 1 <F Page>

Row	Column Numbers ---->	1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	6	0	7	0	6
1	Ped FDW	0	19	0	25	0	16	0	25
2	Min Green	5	8	3	6	5	8	3	6
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	3.0	4.0	0.5	3.0	3.0	4.0	0.5	3.0
6	Max Gap	3.0	5.0	0.5	3.0	3.0	5.0	0.5	3.0
7	Min Gap	3.0	2.0	0.5	3.0	3.0	2.0	0.5	3.0
8	Max Limit	15	40	17	30	20	40	17	30
9	Max Limit 2	0	70	30	0	0	70	30	0
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
E	Yellow Change	4.1	4.8	3.0	3.6	4.1	4.8	3.0	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0

Preempt Timing

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Phase Functions <F Page>

	F	Row
Permit	12_456_8	0
Red Lock	______	1
Yellow Lock	______	2
Min Recall	_2__6_	3
Ped Recall	______	4
View Set Peds	-----	5
Rest In Walk	______	6
Red Rest	______	7
Dual Entry	_2_4_6_8	8
Max Recall	______	9
Soft Recall	______	A
Max 2	______	B
Cond. Service	______	C
Man Cntrl Calls	______	D
Yellow Start	_2__6_	E
First Phases	___4__8	F

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	100	100	90	90	100	100	100	0
1	Phase 1 - ForceOff	19	14	55	50	50	50	50	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	1	1	1	1	25	25	3
4	Phase 4 - ForceOff	59	54	40	35	30	30	30	40	40	4
5	Phase 5 - ForceOff	74	77	55	54	50	50	50	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	1	1	25	25	7
8	Phase 8 - ForceOff	59	54	40	35	30	30	30	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	99	92	14	14	24	79	99	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	22	17	10	10	12	12	12	12	12	D
E	Hold Release	90	75	90	90	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination <C Page>

(* = Coordination Recall)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync	2 6	4
Plan 5 - Sync	2 6	5
Plan 6 - Sync	2 6	6
Plan 7 - Sync	2 6	7
Plan 8 - Sync	2 6	8
Plan 9 - Sync	2 6	9
Coord Ped *		A
NEMA Hold		B
		C
		D
		E
		F

Sync Phases <C Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Configuration <E Page>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	1 4 6 8	1
Plan 2 - Lag	1 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Lag Phases <C Page>

Row	Time	Plan	Offset	Day of Week	Time	Funct.	Day of Week	Column F Phases/Bits
0	00 : 00	0	0		00 : 00	0		
1	06 : 00	1	A	23456	00 : 00	0		
2	09 : 00	E	A	23456	00 : 00	0		
3	11 : 00	2	A	23456	00 : 00	0		
4	13 : 00	E	A	23456	00 : 00	0		
5	15 : 00	3	A	23456	00 : 00	0		
6	19 : 00	E	A	23456	00 : 00	0		
7	00 : 00	0	0		00 : 00	0		
8	00 : 00	0	0		00 : 00	0		
9	00 : 00	0	0		00 : 00	0		
A	00 : 00	0	0		00 : 00	0		
B	00 : 00	0	0		00 : 00	0		
C	00 : 00	0	0		00 : 00	0		
D	00 : 00	0	0		00 : 00	0		
E	00 : 00	0	0		00 : 00	0		
F	00 : 00	0	0		00 : 00	0		

TOD Coordination <9 Key with C+D+9=0> — TOD Function <7 Key> — <D Page>

Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week
0	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
1	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
2	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
3	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
4	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
5	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
6	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
7	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
8	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
9	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
A	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
B	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
C	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
D	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
E	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
F	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	

Holiday # 1 TOD Coordination <9 Key with C+D+9=1> — Holiday # 2 TOD Coordination <9 Key with C+D+9=2> — Holiday # 3 TOD Coordination <9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector
OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	4.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	4.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: No. River Rd. & So. Redondo

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **112**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/22/2018 10:56**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	12	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	80	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	30	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	0	0	7	0	6
1	Ped FDW	0	19	0	0	0	16	0	25
2	Min Green	5	10	3	6	5	10	3	6
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	3.0	4.0	0.5	3.0	3.0	4.0	0.5	3.0
6	Max Gap	3.0	5.0	0.5	3.0	3.0	5.0	0.5	3.0
7	Min Gap	3.0	2.0	0.5	3.0	3.0	2.0	0.5	3.0
8	Max Limit	15	40	17	25	20	40	17	15
9	Max Limit 2	0	70	30	0	30	70	30	0
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
E	Yellow Change	4.1	4.8	3.0	3.6	4.1	4.8	3.0	3.6
F	Red Clear	1.0	2.0	0.0	1.0	1.0	2.0	0.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

	F	Row
Permit	12_456_8	0
Red Lock	______	1
Yellow Lock	______	2
Min Recall	_2___6__	3
Ped Recall	______	4
View Set Peds	-----	5
Rest In Walk	______	6
Red Rest	______	7
Dual Entry	_2_4_6_8	8
Max Recall	______	9
Soft Recall	______	A
Max 2	______	B
Cond. Service	______	C
Man Cntrl Calls	______	D
Yellow Start	_2___6__	E
First Phases	___4___8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

INTERSECTION: No. River Rd. & So. Redondo

Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	Plan 1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	100	100	90	90	120	100	120	0
1	Phase 1 - ForceOff	55	55	55	50	50	50	55	65	55	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	1	1	1	1	25	1	3
4	Phase 4 - ForceOff	35	35	35	35	30	30	30	40	30	4
5	Phase 5 - ForceOff	60	60	60	54	50	50	55	65	55	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	1	1	25	1	7
8	Phase 8 - ForceOff	35	35	35	35	30	30	30	40	30	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	40	45	63	0	70	36	93	0	6	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	10	10	10	10	12	12	12	12	12	D
E	Hold Release	85	75	95	90	255	255	110	255	110	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

		E	Row
			0
	Plan 1 - Sync	2 6	1
	Plan 2 - Sync	2 6	2
	Plan 3 - Sync	2 6	3
	Plan 4 - Sync	2 6	4
	Plan 5 - Sync	2 6	5
	Plan 6 - Sync	2 6	6
	Plan 7 - Sync	2 6	7
	Plan 8 - Sync	2 6	8
	Plan 9 - Sync	2 6	9
	Coord Ped *		A
	NEMA Hold		B
			C
			D
			E
			F

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	06 : 00	1	A	23456
2	09 : 00	E	A	23456
3	11 : 00	2	A	23456
4	13 : 00	E	A	23456
5	15 : 00	3	A	23456
6	19 : 00	E	A	23456
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Row	Time	Funct	Day of Week	Column F Phases/Bits
0	00 : 00	0		
1	00 : 00	0		
2	00 : 00	0		
3	00 : 00	0		
4	00 : 00	0		
5	00 : 00	0		
6	00 : 00	0		
7	00 : 00	0		
8	00 : 00	0		
9	00 : 00	0		
A	00 : 00	0		
B	00 : 00	0		
C	00 : 00	0		
D	00 : 00	0		
E	00 : 00	0		
F	00 : 00	0		

TOD Function
<7 Key>

<D Page>

Row	Holiday # 1 Time	Plan	Offset	Day of Week	Holiday # 2 Time	Plan	Offset	Day of Week	Holiday # 3 Time	Plan	Offset	Day of Week
0	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
1	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
2	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
3	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
4	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
5	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
6	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
7	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
8	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
9	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
A	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
B	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
C	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
D	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
E	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	
F	00 : 00	0	0		00 : 00	0	0		00 : 00	0	0	

Holiday # 1 TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2 TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3 TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	12.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	2.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	12.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	2.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 – – – –	1234____
C	13 14 15 16 17 18 19 20	12345678
D	– – – – 21 22 23 24	____5678
E	– – – – – – – –	1234____
F	– 25 26 27 28 – – –	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase (columns 1–8)

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase (columns 1–8)

Phase Timing - Bank 3 <F Page>

Row		7	8	9	A	B	C	D	E	F	Row
Row		Time	Dwell	Hold	Advance	Force Off	Vehicle Call	Permit Phases	Ped Omit	Output	Row
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0
1		0	0								1
2		0	0								2
3		0	0								3
4		0	0								4
5		0	0								5
6		0	0								6
7		0	0								7
8		0	0								8
9	Limited Service	0	0								9
A	Int. --->	---	0								A <— Limited Service Interval (Set Dwell = 255)
B		0	0								B
C		0	0								C
D		0	0								D
E		0	0								E
F		0	0								F

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: North River & College

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **81**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **5/13/2021 15:47**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	14	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	81	<C+0+3>
QuicNet Channel	Serial:COM20:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	4	0	7	0	0
1	Ped FDW	0	22	0	22	0	12	0	0
2	Min Green	5	10	8	6	5	10	0	0
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	3.0	4.0	3.0	3.0	3.0	4.0	0.0	0.0
6	Max Gap	5.0	5.0	3.0	3.0	3.0	5.0	0.0	0.0
7	Min Gap	2.5	3.5	3.0	3.0	3.0	3.5	0.0	0.0
8	Max Limit	45	40	45	10	10	40	0	0
9	Max Limit 2	30	50	45	20	15	50	0	0
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
D	Reduce Every	1.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0
E	Yellow Change	4.1	4.8	4.4	3.6	4.1	4.8	0.0	0.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	1
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

	F	Row
Permit	123456__	0
Red Lock	__3_____	1
Yellow Lock	________	2
Min Recall	_2___6__	3
Ped Recall	________	4
View Sel Peds	-----	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2___6__	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	1_______	C
Man Cntrl Calls	________	D
Yellow Start	_2___6__	E
First Phases	__3_____	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	1	2	3	4	5	6	7	8	9	Row
0	Cycle Length	100	100	130	100	90	140	120	100	120	0
1	Phase 1 - ForceOff	29	35	0	63	30	0	40	65	40	1
2	Phase 2 - ForceOff	0	0	78	0	0	87	0	0	0	2
3	Phase 3 - ForceOff	55	55	35	1	1	46	70	25	75	3
4	Phase 4 - ForceOff	70	70	53	1	1	64	90	40	90	4
5	Phase 5 - ForceOff	80	80	71	1	1	82	105	65	105	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	0	1	1	0	1	1	1	7
8	Phase 8 - ForceOff	1	1	0	1	1	0	1	1	1	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	43	24	0	0	76	105	52	0	30	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	5	5	12	12	12	12	12	12	12	D
E	Hold Release	90	85	255	255	255	255	110	255	110	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

		E	Row
			0
	Plan 1 - Sync	2 6	1
	Plan 2 - Sync	2 6	2
	Plan 3 - Sync	1 6	3
	Plan 4 - Sync	2 6	4
	Plan 5 - Sync	2 6	5
	Plan 6 - Sync	1 6	6
	Plan 7 - Sync	2 6	7
	Plan 8 - Sync	2 6	8
	Plan 9 - Sync	2 6	9
	Coord Ped *		A
	NEMA Hold		B
			C
			D
			E
			F

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	2
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	3
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	
Yellow Flash Phases	
Overlap A - Phases	1 3
Overlap B - Phases	23
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Coord Force-Off Adjust for Ped Service <C+D+F>

Force-Off Adjust	8

TBC Transition <C+D+D>

Transition Type	0

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	1 4 6 8	1
Plan 2 - Lag	1 4 6 8	2
Plan 3 - Lag	1 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	1 4 6 8	5
Plan 6 - Lag	1 4 67	6
Plan 7 - Lag	1 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	1 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Row	Time	Plan	Offset	Day of Week
0	00:00	E	0	1234567
1	06:00	E	A	_23456_
2	09:00	E	A	_23456_
3	15:00	6	A	_23456_
4	17:30	E	A	_23456_
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Row	Time	Funct	Day of Week	Column F Phases/Bits
0	00:00	0		
1	00:00	0		
2	00:00	0		
3	00:00	0		
4	00:00	0		
5	00:00	0		
6	00:00	0		
7	00:00	0		
8	00:00	0		
9	00:00	0		
A	00:00	0		
B	00:00	0		
C	00:00	0		
D	00:00	0		
E	00:00	0		
F	00:00	0		

TOD Function
<7 Key>

<D Page>

	Holiday # 1				Holiday # 2				Holiday # 3				
Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Row
0	00:00	0	0		00:00	0	0		00:00	0	0		0
1	00:00	0	0		00:00	0	0		00:00	0	0		1
2	00:00	0	0		00:00	0	0		00:00	0	0		2
3	00:00	0	0		00:00	0	0		00:00	0	0		3
4	00:00	0	0		00:00	0	0		00:00	0	0		4
5	00:00	0	0		00:00	0	0		00:00	0	0		5
6	00:00	0	0		00:00	0	0		00:00	0	0		6
7	00:00	0	0		00:00	0	0		00:00	0	0		7
8	00:00	0	0		00:00	0	0		00:00	0	0		8
9	00:00	0	0		00:00	0	0		00:00	0	0		9
A	00:00	0	0		00:00	0	0		00:00	0	0		A
B	00:00	0	0		00:00	0	0		00:00	0	0		B
C	00:00	0	0		00:00	0	0		00:00	0	0		C
D	00:00	0	0		00:00	0	0		00:00	0	0		D
E	00:00	0	0		00:00	0	0		00:00	0	0		E
F	00:00	0	0		00:00	0	0		00:00	0	0		F

Holiday # 1 TOD Coordination
<9 Key with C+D+9=1>

Holiday # 2 TOD Coordination
<9 Key with C+D+9=2>

Holiday # 3 TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	3.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	3.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	3.9	0.0	7
B	Overlap B	0.0	0.0	0.0	8
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 – – – –	1234
C	13 14 15 16 17 18 19 20	12345678
D	– – – – 21 22 23 24	5678
E	– – – – – – – –	1234
F	– 25 26 27 28 – – –	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	---	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: College & Mance Buchanon

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **151**

N/S Street Name: **College Blvd.**
E/W Street Name: **Mance Buchanon**

Last Database Change: **8/27/2019 16:10**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	30	<C+0+0>
Zone Number		<C+0+1>
Area Number	0	<C+0+2>
Area Address	6	<C+0+3>
QuicNet Channel	Serial:COM17:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	4	0	7	0	0
1	Ped FDW	0	0	0	24	0	14	0	0
2	Min Green	0	10	0	8	6	10	4	0
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
5	Veh Extension	0.0	4.0	0.0	3.0	2.0	4.0	3.0	0.0
6	Max Gap	0.0	6.0	0.0	3.0	2.0	6.0	3.0	0.0
7	Min Gap	0.0	2.5	0.0	3.0	2.0	2.5	3.0	0.0
8	Max Limit	0	40	0	25	20	40	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
D	Reduce Every	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0
E	Yellow Change	0.0	4.8	0.0	3.6	4.1	4.8	0.0	0.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

	F	Row
Permit	_2_456__	0
Red Lock	________	1
Yellow Lock	________	2
Min Recall	_2___6__	3
Ped Recall	________	4
View Set Peds	-----	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2___6__	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	________	C
Man Cntrl Calls	________	D
Yellow Start	_2___6__	E
First Phases	___4____	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Printed on 10/4/2021 5:18 PM   Timing Sheet Version: 200 SA & CA   Revision: 10430

Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Row
0	Cycle Length	80	80	90	100	100	100	100	100	100	0
1	Phase 1 - ForceOff	1	1	1	65	65	65	65	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	1	1	1	25	25	25	25	25	25	3
4	Phase 4 - ForceOff	32	32	32	40	40	40	40	40	40	4
5	Phase 5 - ForceOff	57	57	65	65	65	65	65	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	25	25	25	25	25	25	7
8	Phase 8 - ForceOff	1	1	1	40	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	63	26	28	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	80	80	90	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync	2 6	4
Plan 5 - Sync	2 6	5
Plan 6 - Sync	2 6	6
Plan 7 - Sync	2 6	7
Plan 8 - Sync	2 6	8
Plan 9 - Sync	2 6	9
Coord Ped *		A
NEMA Hold		B
		C
		D
		E
		F

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	
Ped 6P	6
Ped 4P	4
Ped 8P	
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	1

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Row	Time	Plan	Offset	Day of Week	Time	Funct.	Day of Week	Column F Phases/Bits
0	06:30	1	A	_23456_	00:00	E	1234567	1
1	09:00	2	A	_23456_	00:00	0		
2	14:00	3	A	_23456_	00:00	0		
3	20:00	E	A	_23456_	00:00	0		
4	09:00	1	A	1_____7	00:00	0		
5	18:00	E	A	1_____7	00:00	0		
6	00:00	0	0		00:00	0		
7	00:00	0	0		00:00	0		
8	00:00	0	0		00:00	0		
9	00:00	0	0		00:00	0		
A	00:00	0	0		00:00	0		
B	00:00	0	0		00:00	0		
C	00:00	0	0		00:00	0		
D	00:00	0	0		00:00	0		
E	00:00	0	0		00:00	0		
F	00:00	0	0		00:00	0		

TOD Coordination <9 Key with C+D+9=0> — **TOD Function** <7 Key> — <D Page>

Row	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week	Time	Plan	Offset	Day of Week
0	00:00	0	0		00:00	0	0		00:00	0	0	
1	00:00	0	0		00:00	0	0		00:00	0	0	
2	00:00	0	0		00:00	0	0		00:00	0	0	
3	00:00	0	0		00:00	0	0		00:00	0	0	
4	00:00	0	0		00:00	0	0		00:00	0	0	
5	00:00	0	0		00:00	0	0		00:00	0	0	
6	00:00	0	0		00:00	0	0		00:00	0	0	
7	00:00	0	0		00:00	0	0		00:00	0	0	
8	00:00	0	0		00:00	0	0		00:00	0	0	
9	00:00	0	0		00:00	0	0		00:00	0	0	
A	00:00	0	0		00:00	0	0		00:00	0	0	
B	00:00	0	0		00:00	0	0		00:00	0	0	
C	00:00	0	0		00:00	0	0		00:00	0	0	
D	00:00	0	0		00:00	0	0		00:00	0	0	
E	00:00	0	0		00:00	0	0		00:00	0	0	
F	00:00	0	0		00:00	0	0		00:00	0	0	

Holiday # 1 TOD Coordination <9 Key with C+D+9=1> — **Holiday # 2 TOD Coordination** <9 Key with C+D+9=2> — **Holiday # 3 TOD Coordination** <9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	15.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	5.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	---	---	---	---	---	---	---	---	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9	Limited Service	0	0								9	
A	Int. --->	---	0								A	<--- Limited Service Interval
B		0	0								B	
C		0	0								C	
D		0	0								D	(Set Dwell = 255)
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

INTERSECTION: College & Adams

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **43**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **4/20/2020 13:21**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Communication Addresses

Drop Number	13	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	1	<C/0+0+2>
Area Address	43	<C/0+0+3>
QuicNet Channel	Serial:COM17:	(QuicNet)

Manual Selection

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Start / Revert Times

Flash Start	0	<F/1+0+E>
Red Revert	2.0	<F/1+0+F>
All Red Start	5.0	<F/1+C+0>

Exclusive Ped Phase

(Outputs specified in Assignable Outputs at E/127+A+E & F)

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Phase Timing - Bank 1 <C+0+F=1>

Row	Column Numbers ---->	1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	6	0	7	0	6
1	Ped FDW	0	15	0	26	0	12	0	26
2	Min Green	5	10	4	8	5	10	4	8
3	Type 3 Disconnect	0	99	0	0	0	99	0	0
4	Added per Vehicle	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
5	Veh Extension	3.0	4.0	2.0	3.0	3.0	4.0	2.0	3.0
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	3.0	3.0	0.5	3.0	3.0	3.0	0.5	3.0
8	Max Limit	20	50	20	30	20	50	20	30
9	Max Limit 2	20	50	30	30	20	50	30	30
A	Adv. / Delay Walk	0	0	0	5	0	0	0	5
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0
E	Yellow Change	4.1	4.8	3.0	3.7	4.1	4.8	3.0	3.7
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Alternate Timing <C+0+F=1>

	9	A	B	C	D
	- - -	- - -	- - -	- - -	- - -
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0
	Max Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension

Preempt Timing

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Phase Functions <C+0+F=1>

	F	Row
Permit	12_456_8	0
Red Lock	________	1
Yellow Lock	________	2
Min Recall	_2___6__	3
Ped Recall	________	4
View Set Peds	- - - - -	5
Rest In Walk	________	6
Red Rest	________	7
Dual Entry	_2_4_6_8	8
Max Recall	________	9
Soft Recall	________	A
Max 2	________	B
Cond. Service	________	C
Man Cntrl Calls	________	D
Yellow Start	1___5___	E
First Phases	_2___6__	F

Overlap

Row	Column Numbers ---> / Overlap Name --->	1	2	3	4	5	6	7	8
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Assignments <C+0+E=29>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = Solid FDW on EV
5 = Extended Status
6 = International Ped
7 = Flash - Clear Outputs
8 = Split Ring

Extra 2 Flags
1 = AWB During Initial
2 = LMU Installed
3 = Disable Min Walk
4 = QuicNet/4 System
5 = Ignore P/P on EV
6 =
7 = Allow QuicNet PE
8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	- - -	4
RR-2 *	- - -	5
SE-1	0	6
SE-2	0	7
		8
		9
		A
		B
		C
		D
		E
		F

Preempt Priority
<C+0+E=125>
(* RR-1 is always Highest, and RR-2 is always Second Highest)

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <C+0+E=125>

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	12345678
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	

Configuration <C+0+E=125>

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	
Advance Walk Phases	4 8
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reservice	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 6 8
Start-up Ped Calls	2 4 6 8

Specials <C+0+F=2>

Flash to PE & PE Non-Lock
1 = EV A 5 = RR 1
2 = EV B 6 = RR 2
3 = EV C 7 = SE 1
4 = EV D 8 = SE 2

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	2	Row
		0
Phase 1	10	1
Phase 2	10	2
Phase 3	10	3
Phase 4	10	4
Phase 5	10	5
Phase 6	10	6
Phase 7	10	7
Phase 8	10	8
		9
		A
		B
		C
		D
		E
		F

Coordination Transition Minimums
<C+0+C=5>

Row	Column Numbers --->	1	2	3	4	5	6	7	8	9
	Plan Name --->									
0	Cycle Length	80	80	90	100	100	100	100	100	100
1	Phase 1 - ForceOff	45	50	50	55	55	55	55	55	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	1	1	1	20	20	20	20	20	20
4	Phase 4 - ForceOff	30	30	30	40	40	40	40	40	40
5	Phase 5 - ForceOff	45	50	50	55	55	55	55	55	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	1	1	1	20	20	20	20	20	20
8	Phase 8 - ForceOff	30	30	30	40	40	40	40	40	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	53	16	18	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	15	15	15	15	15	15	15	15	15
E	Hold Release	80	80	90	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

Coord Extra
1 = Programmed WALK Time for Sync Phases
2 = Always Terminate Sync Phase Peds

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	2 6
5	Plan 5 - Sync	2 6
6	Plan 6 - Sync	2 6
7	Plan 7 - Sync	2 6
8	Plan 8 - Sync	2 6
9	Plan 9 - Sync	2 6
A	NEMA Sync	
B	NEMA Hold	
C		
D		
E	Coord Extra	
F		

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	5	5	5	0	0	0	0	0	0
1	Perm 2 - Start	0	0	0	0	0	0	0	0	0
2	Perm 2 - End	0	0	0	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

Coordination - Bank 2 <C+0+C=2>

Row		F
0	Free Lag	2 4 6 8
1	Plan 1 - Lag	2 4 6 8
2	Plan 2 - Lag	2 4 6 8
3	Plan 3 - Lag	2 4 6 8
4	Plan 4 - Lag	2 4 6 8
5	Plan 5 - Lag	2 4 6 8
6	Plan 6 - Lag	2 4 6 8
7	Plan 7 - Lag	2 4 6 8
8	Plan 8 - Lag	2 4 6 8
9	Plan 9 - Lag	2 4 6 8
A	External Lag	
B		
C		
D		
E		
F		

Lag Phases <C+0+C=1>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set Monday	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Reserved	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	0	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	0	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	0	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

Assignable Inputs <C+0+E=126>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

Assignable Outputs <C+0+E=127>

Row	Column Numbers ---> / Phase Names --->	1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <C+0+F=2>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0

Max Initial / Alternate Walk / Alternate FDW / Alternate Initial / Alternate Extension

Alternate Timing

Transition Type
0.X = Shortway
1.X = Lengthen
X.1 thru X.4 = Number of cycles when lengthing

Transition Type	0.3	<C/5+1+9>

TBC Transition

Lag Hold Phases	______	<C/5+1+A>

Coordinated Lag Hold Phases

Daylight Savings Date
If set to all zeros, standard dates will be used.

Begin Month	3	<C/5+2+A>
Begin Week	2	<C/5+2+B>
End Month	11	<C/5+2+C>
End Week	1	<C/5+2+D>

Daylight Savings Time

Time B4 Yellow	0.0	<F/1+C+E>
Phase Number	0	<F/1+C+F>

Advance Warning Beacon - Sign 1

Time B4 Yellow	0.0	<F/1+D+E>
Phase Number	0	<F/1+D+F>

Advance Warning Beacon - Sign 2

Row		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <C+0+F=3>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0

Max Initial / Alternate Walk / Alternate FDW / Alternate Initial / Alternate Extension

Alternate Timing

Row	Detector Name	C1 Pin Number (0)	Attributes (1)	Phase(s) (2)	Assign (3)	Delay (1)	Carry-over (3)
0		39	45 7	2	123	0.0	0.0
1		40	45 7	6	123	0.0	0.0
2		41	45 7	4	123 8	10.0	0.0
3		42	45 7	8	123 8	10.0	0.0
4		43	45 7	2	123	0.0	0.0
5		44	45 7	6	123	0.0	0.0
6		45	45 7	4	123 8	4.0	0.0
7		46	45 7	8	123 8	4.0	0.0
8		47	67	2	123 8	0.0	0.0
9		48	67	6	123	0.0	0.0
A		49	67	4	123	0.0	0.0
B		50	67	8	123	0.0	0.0
C		55	45 7	5	123 8	3.0	0.0
D		56	45 7	1	123 8	3.0	0.0
E		57	45 7	7	123	0.0	0.0
F		58	45 7	3	123	0.0	0.0

Row	Detector Name	C1 Pin Number (4)	Attributes (5)	Phase(s) (6)	Assign (7)	Delay (2)	Carry-over (4)
0		59	45 7	5	123	0.0	0.0
1		60	45 7	1	123	0.0	0.0
2		61	45 7	7	123	0.0	0.0
3		62	45 7	3	123	0.0	0.0
4		63	45 7	2	123 8	0.0	0.0
5		64	45 7	6	123 8	0.0	0.0
6		65	45 7	4	123	0.0	0.0
7		66	45 7	8	123	0.0	0.0
8		67	2	2	123 8	0.0	0.0
9		68	2	6	123 8	0.0	0.0
A		69	2	4	123 8	0.0	0.0
B		70	2	8	123 8	0.0	0.0
C		76	45 7	2	123	0.0	0.0
D		77	45 7	6	123	0.0	0.0
E		78	45 7	4	123	0.0	0.0
F		79	45 7	8	123	0.0	0.0

Detector Assignments <C+0+E=126> <C+0+D=0>

Detector Attributes
1 = Full Time Delay
2 = Ped Call
3 =
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

Det. Assignments
1 = Det. Set 1
2 = Det. Set 2
3 = Det. Set 3
4 =
5 =
6 = Failure - Min Recall
7 = Failure - Max Recall
8 = Report on Failure

Column Numbers --->	Ped / Phase / Overlap 1	2	3	4	5	6	7	8	Row
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

Redirect Phase Outputs <C+0+E=127>

Cabinet Type	0	<E/125+D+0>

Enable Redirection
(Enable Redirection = 30)

Max OFF (minutes)	255	<D/0+0+1>
Max ON (minutes)	7	<D/0+0+2>

Detector Failure Monitor

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

Delay Logic Times
<C+0+D=0> (seconds)

Disable Alarms
1 = Stop Time
2 = Flash Sense
3 = Keyboard Entry
4 = Manual Plan
5 = Police Control
6 = External Alarm
7 = Detector Failure
8 =

Omit Alarm		<C/5+F+0>

Disable Alarm Reporting

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	06 : 30	1	A	23456
2	09 : 00	2	A	23456
3	14 : 00	3	A	23456
4	20 : 00	E	A	23456
5	09 : 00	1	A	1 7
6	18 : 00	E	A	1 7
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Row	Time	Funct.	Day of Week
0	00 : 00	0	
1	00 : 00	0	
2	00 : 00	0	
3	00 : 00	0	
4	00 : 00	0	
5	00 : 00	0	
6	00 : 00	0	
7	00 : 00	0	
8	00 : 00	0	
9	00 : 00	0	
A	00 : 00	0	
B	00 : 00	0	
C	00 : 00	0	
D	00 : 00	0	
E	00 : 00	0	
F	00 : 00	0	

TOD Function <C+0+7=0.1>

Row	Column 4 Phases/Bits
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
A	
B	
C	
D	
E	
F	

<C+0+E=27>

Row	Day	Year	Month	Holiday Type
0	00	00	0	
1	00	00	0	
2	00	00	0	
3	00	00	0	
4	00	00	0	
5	00	00	0	
6	00	00	0	
7	00	00	0	
8	00	00	0	
9	00	00	0	
A	00	00	0	
B	00	00	0	
C	00	00	0	
D	00	00	0	
E	00	00	0	
F	00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Row	Time	Plan	Offset	Holiday Type
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Row	Time	Funct.	Holiday Type
0	00 : 00	0	
1	00 : 00	0	
2	00 : 00	0	
3	00 : 00	0	
4	00 : 00	0	
5	00 : 00	0	
6	00 : 00	0	
7	00 : 00	0	
8	00 : 00	0	
9	00 : 00	0	
A	00 : 00	0	
B	00 : 00	0	
C	00 : 00	0	
D	00 : 00	0	
E	00 : 00	0	
F	00 : 00	0	

Holiday TOD Function <C+0+7=0.2>

Row	Column 4 Phases/Bits
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
A	
B	
C	
D	
E	
F	

<C+0+E=28>

Row	Day	Year	Month	Holiday Type
0	00	00	0	
1	00	00	0	
2	00	00	0	
3	00	00	0	
4	00	00	0	
5	00	00	0	
6	00	00	0	
7	00	00	0	
8	00	00	0	
9	00	00	0	
A	00	00	0	
B	00	00	0	
C	00	00	0	
D	00	00	0	
E	00	00	0	
F	00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Row	Time	Plan	Offset	Holiday Type
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 5 - Disable Low Priority Preempt
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 8

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 1 <C+0+E=27>

Notes:

0 <E/27+5+F>

Limited Service Interval

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 2 <C+0+E=28>

Notes:

0 <E/28+5+F>

Limited Service Interval

Min Time (seconds)	0	<F/1+0+8>

Min Green Before PE Force Off

Max Time (minutes)	255	<F/1+0+9>

Max Preempt Time Before Failure

Min Time (seconds)	0	<F/1+0+A>

Min Time Between Same Preempts
(Does Not Apply To Railroad Preempt)

Low Pri. Channel	______	<E/125+C+8>

Disable Low Priority Channel

Low Priority
1 = Channel A
2 = Channel B
3 = Channel C
4 = Channel D

Delay Time (seconds)	0	<F/1+A+D>

Bus Delay

Max Time (seconds)	0	<F/1+A+E>

Max Early Green

Max Time (seconds)	0	<F/1+A+F>

Max Green Extension

Row	Time	Headway	Direction	Day of Week
0	00 : 00	0	0	______
1	00 : 00	0	0	______
2	00 : 00	0	0	______
3	00 : 00	0	0	______
4	00 : 00	0	0	______
5	00 : 00	0	0	______
6	00 : 00	0	0	______
7	00 : 00	0	0	______
8	00 : 00	0	0	______
9	00 : 00	0	0	______
A	00 : 00	0	0	______
B	00 : 00	0	0	______
C	00 : 00	0	0	______
D	00 : 00	0	0	______
E	00 : 00	0	0	______
F	00 : 00	0	0	______

Headway <C+0+9=2.1>

Headway Time
(minutes)
1 thru 9 = 1 thru 9
A = 10
B = 11
C = 12
D = 13
E = 14
F = 15

Low Priority Preemption (Bus Priority)

Only available with *Program 233RV2.B* (and above)

Note: Also see "Time of Day Functions", Function E, Bit 5 (Disable Low Priority)

INTERSECTION: College & Via Cupeno

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **42**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **5/10/2021 8:51**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Communication Addresses

Drop Number	12	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	42	<C+0+3>
QuicNet Channel	Serial:COM17:	(QuicNet)

Manual Selection

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Start / Revert Times

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Phase Timing - Bank 1 <F Page>

Row	Column Numbers ---> / Phase Names --->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	4	0	7	0	0
1	Ped FDW	0	15	0	24	0	18	0	0
2	Min Green	6	10	8	8	6	10	3	4
3	Type 3 Limit	0	99	0	0	0	99	0	0
4	Added Initial	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
5	Veh Extension	2.5	3.5	3.0	3.0	2.5	3.5	0.5	0.5
6	Max Gap	2.5	5.0	3.0	3.0	2.5	5.0	0.5	0.5
7	Min Gap	2.5	2.0	3.0	3.0	2.5	2.0	0.5	0.5
8	Max Limit	30	50	20	30	30	50	17	20
9	Max Limit 2	30	70	30	70	30	70	30	30
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	1.5	0.0	0.0	0.0	1.5	1.0	0.0
E	Yellow Change	4.1	4.8	4.0	4.0	4.1	4.8	3.0	4.0
F	Red Clear	1.0	2.0	1.0	1.0	1.0	2.0	0.0	1.0

Preempt Timing / **Phase Functions** <F Page>

Preempt (E)	E	Phase Functions (F)	F	Row
RR-1 Delay	0	Permit	123456__	0
RR-1 Clear	10	Red Lock	________	1
EV-A Delay	0	Yellow Lock	________	2
EV-A Clear	5	Min Recall	_2___6__	3
EV-B Delay	0	Ped Recall	________	4
EV-B Clear	5	*View Set Peds*	-----	5
EV-C Delay	0	Rest In Walk	________	6
EV-C Clear	5	Red Rest	________	7
EV-D Delay	0	Dual Entry	_2___6__	8
EV-D Clear	5	Max Recall	________	9
RR-2 Delay	0	Soft Recall	________	A
RR-2 Clear	10	Max 2	________	B
View EV Delay	---	Cond. Service	________	C
View EV Clear	---	Man Cntrl Calls	________	D
View RR Delay	---	Yellow Start	1___5__	E
View RR Clear	---	First Phases	_2___6__	F

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

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Coordination <C Page>

Row	Column Numbers ---> / Plan Name --->	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Row
0	Cycle Length	80	80	90	90	100	30	80	100	100	0
1	Phase 1 - ForceOff	50	50	50	15	15	0	50	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	15	15	15	35	35	0	1	25	25	3
4	Phase 4 - ForceOff	35	35	35	60	60	15	25	40	40	4
5	Phase 5 - ForceOff	55	55	60	75	85	0	50	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	1	1	1	1	1	0	1	25	25	7
8	Phase 8 - ForceOff	1	1	1	1	1	15	25	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	14	49	38	0	3	0	20	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	80	80	90	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

(* = Coordination Recall)

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	2 6
5	Plan 5 - Sync	2 6
6	Plan 6 - Sync	2 6
7	Plan 7 - Sync	2 6
8	Plan 8 - Sync	2 6
9	Plan 9 - Sync	2 6
A	Coord Ped *	
B	NEMA Hold	
C		
D		
E		
F		

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	3
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	8

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	2 4 6	0
Plan 1 - Lag	2 4 6	1
Plan 2 - Lag	2 4 6	2
Plan 3 - Lag	2 4 6	3
Plan 4 - Lag	1 4 6	4
Plan 5 - Lag	1 4 6	5
Plan 6 - Lag	2 4 6	6
Plan 7 - Lag	2 4 6	7
Plan 8 - Lag	2 4 6	8
Plan 9 - Lag	2 4 6	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

TOD Coordination
<9 Key with C+D+9=0>

Row	Time	Plan	Offset	Day of Week
0	06:30	1	A	
1	09:00	2	A	
2	14:00	3	A	
3	19:00	E	A	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

TOD Function
<7 Key>

Column F: <D Page>

Row	Time	Funct.	Day of Week	Column F Phases/Bits
0	00:00	0		
1	00:00	0		
2	00:00	0		
3	00:00	0		
4	00:00	0		
5	00:00	0		
6	00:00	0		
7	00:00	0		
8	00:00	0		
9	00:00	0		
A	00:00	0		
B	00:00	0		
C	00:00	0		
D	00:00	0		
E	00:00	0		
F	00:00	0		

Holiday # 1 / Holiday # 2 / Holiday # 3 TOD Coordination
Holiday # 1 TOD Coordination <9 Key with C+D+9=1>; Holiday # 2 TOD Coordination <9 Key with C+D+9=2>; Holiday # 3 TOD Coordination <9 Key with C+D+9=3>

Row	H1 Time	H1 Plan	H1 Offset	H1 Day of Week	H2 Time	H2 Plan	H2 Offset	H2 Day of Week	H3 Time	H3 Plan	H3 Offset	H3 Day of Week
0	00:00	0	0		00:00	0	0		00:00	0	0	
1	00:00	0	0		00:00	0	0		00:00	0	0	
2	00:00	0	0		00:00	0	0		00:00	0	0	
3	00:00	0	0		00:00	0	0		00:00	0	0	
4	00:00	0	0		00:00	0	0		00:00	0	0	
5	00:00	0	0		00:00	0	0		00:00	0	0	
6	00:00	0	0		00:00	0	0		00:00	0	0	
7	00:00	0	0		00:00	0	0		00:00	0	0	
8	00:00	0	0		00:00	0	0		00:00	0	0	
9	00:00	0	0		00:00	0	0		00:00	0	0	
A	00:00	0	0		00:00	0	0		00:00	0	0	
B	00:00	0	0		00:00	0	0		00:00	0	0	
C	00:00	0	0		00:00	0	0		00:00	0	0	
D	00:00	0	0		00:00	0	0		00:00	0	0	
E	00:00	0	0		00:00	0	0		00:00	0	0	
F	00:00	0	0		00:00	0	0		00:00	0	0	

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Holiday Dates
<8 Key>

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	10.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	15.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	2.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Row	Column Numbers --->	1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Column Numbers --->	1	2	3	4	5	6	7	8	Row
Phase Names --->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
------	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9	Limited	0	0								9	
A	Service Int. --->	- - -	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

LOCATION: **RTE 76 EXPRESSWAY @ COLLEGE BLVD**

CALTRANS C8 Version 3 DATE: 12/5/14 PAGE 1

F PAGE

	INTERVAL	PHASE TIMING									PRE-EMPTION		F									
		1	2	3	4	5	6	7	8	9	E		FLAGS	1	2	3	4	5	6	7	8	
0	WALK	1	7	1	7	1	7	1	7	CLK RST	EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
1	DONT WALK	1	26	1	36	1	26	1	34		RR1 CLR	15	RED LOCK									1
2	MIN GREEN	13	25	12	11	12	25	12	11		EVA DLY	0	YEL LOCK									2
3	TYPE 3 DET	0	255	0	255	0	255	0	255		EVA CLR	5	V RECALL		2				6			3
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL									4
5	PASSAGE	3.0	6.3	3.0	6.5	4.0	6.3	3.0	6.5		EVB CLR	5	PED PHASES		2		4		6		8	5
6	MAX GAP	5.0	8.3	5.0	8.8	6.0	8.3	5.0	8.8		EVC DLY	0	RT OLA									6
7	MIN GAP	1.0	3.0	1.0	3.0	2.0	3.5	1.0	3.0		EVC CLR	5	RT OLB									7
8	MAX EXT	12	30	8	24	23	30	23	39		EVD DLY	0	DBL ENTRY				4				8	8
9	MAX 2		80			35	80			YR	EVD CLR	5	MAX 2 PHASES		2			5	6			9
A	MAX 3									MO	MAX EV	255	LAG PHASES	**READ ONLY**								A
B										DAY	RR2 CLR	15	RED REST									B
C	REDUCE BY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	DOW			REST-IN-WALK									C
D	EVERY	0.4	0.6	0.4	0.5	0.5	0.6	0.4	0.6	HR			MAX 3 PHASES									D
E	**YELLOW**	3.7	5.5	3.7	4.8	3.7	5.5	3.7	4.8	MIN			YEL START UP		2				6			E
F	RED	2.0	2.5	2.0	2.0	2.0	2.5	2.0	2.0	SEC			FIRST PHASE			3				7		F
3.5	PED XING FT		116		150		118		140					1	2	3	4	5	6	7	8	
	BIKE XING FT	163	126	152	160	155	135	147	152													

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FDO TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

NOTES:

OLA = FZ 7

OLB = FZ 3

OLC = FZ 5

FZ 2 BIKE = 8 sec

FZ 6 BIKE = 8 sec

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 76 EXPRESSWAY @ COLLEGE BLVD**

CALTRANS C8 Version 3 DATE: 11/15/14

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE		FLAGS									
		1	2	3	4	5	6	7	8	9		C	D	E		F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH	160	160	160	160	160	160		200	180						LAG FZ FREE		2		4		6		8	0
1	FZ1 GRN FCTR	25	25	25	25	25	25		25	25				GAPOUT CP1	1	LAG FZ CP 1		2		4	5			8	1
2														GAPOUT CP2	1	LAG FZ CP 2		2		4	5			8	2
3	FZ3 GRN FCTR	12	12	12	12	12	12		12	12				GAPOUT CP3	0	LAG FZ CP 3		2		4		6		8	3
4	FZ4 GRN FCTR	43	43	43	43	43	43		43	43	PERM TIME			GAPOUT CP4	1	LAG FZ CP 4	1			4		6		8	4
5	FZ5 GRN FCTR	20	35	35	20	35	35		35	35	LAG OFFSET			GAPOUT CP5	1	LAG FZ CP 5		2		4	5			8	5
6											FORCE OFF			GAPOUT CP6	1	LAG FZ CP 6	1			4		6		8	6
7	FZ7 GRN FCTR	30	17	25	30	17	25		37	37	LONG GRN			GAPOUT CP7		LAG FZ CP 7									7
8	FZ8 GRN FCTR	41	41	41	41	41	41		50	50	NO GREEN			GAPOUT CP8	0	LAG FZ CP 8		2		4		6		8	8
9	MULTI CYCLE	0	0	0	0	0	0		0	0				GAPOUT CP9	1	LAG FZ CP 9		2		4	5			8	9
A	OFFSET A	126	142	38	65	137	51		135	149	OFFSET					LAG C COORD									A
B	OFFSET B	126	142	38	65	137	51		135	149						LAG D COORD									B
C	OFFSET C	126	142	38	65	137	51		135	149						COORD FAZES		2				6			C
D	FZ 3 EXT	3	3	3	3	3	3		3	3															D
E	FZ 7 EXT	10	10	10	10	10	10		0	0															E
F	OFFSET INTRPT																								F
																	1	2	3	4	5	6	7	8	

CO1 MANUAL CP
CO2 MASTER CP
CO3 CURRENT CP
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 76X @
COLLEGE BLVD

FEATURE	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION	OFF	ON
1		
2		2
3		4
4		8
5		
6		
7		
8		

COO = 14

CCB/CDB OFFSET TIMER
CCC/CDC LAG GREEN TIMER
CCD/CDD FORCE OFF TIMER
CCE/CDE LONG GREEN TIMER
CCF/CDF NO GREEN TIMER

LOCATION: **RTE 76 EXPRESSWAY @ COLLEGE BLVD**

CALTRANS C8 Version 3 DATE: 8/13/10

D PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1					5				CP 1								
2	CP 2									CP 2					5				CP 2								
3	CP 3									CP 3	1								CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8					5				CP 8								
9	CP 9									CP 9					5				CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

E PAGE

	E	FLAGS								F	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										C-RECALL									2
3										D-RECALL									3
4										EXCLUSIVE									4
5										2 PED		2							5
6										6 PED						6			6
7										4 PED				4					7
8										8 PED								8	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	

LAST POWER FAILURE REGISTER

HOUR = D-A-E
MINUTE = D-B-E
DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)
RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F
MINUTE = D-B-F
DAY = D-C-F

D-E-E = C8 VERSION NUMBER
D-E-F = LITHIUM BATTERY CONDITION
84 = BAD
85 = GOOD

LOCATION: **RTE 76 EXPRESSWAY @ COLLEGE BLVD**

CALTRANS C8 Version 3 DATE: 8/13/10

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	1	2	3	4	5	6	7
0	05	30	2	ON	1	2	3	4	5	6	7
1	21	00	2		1	2	3	4	5	6	7
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C	20	00	E	ON	1	2	3	4	5	6	7
D	06	00	E			2	3	4	5	6	
E											
F	09	00	E		1						7

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0	05	30	1	A		2	3	4	5	6	
1											
2	09	00	2	A	1	2	3	4	5	6	7
3	14	00	3	A	1	2	3	4	5	6	7
4	14	45	9	A		2	3	4	5	6	
5	18	30	3	A		2	3	4	5	6	
6	20	00	E		1	2	3	4	5	6	7
7											
8											
9											
A											
B											
C											
D											
E											
F											

9 PAGE C09 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

ACTIVITY CODE

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED

7 ENERGIZE AUX OUTPUT-GREEN

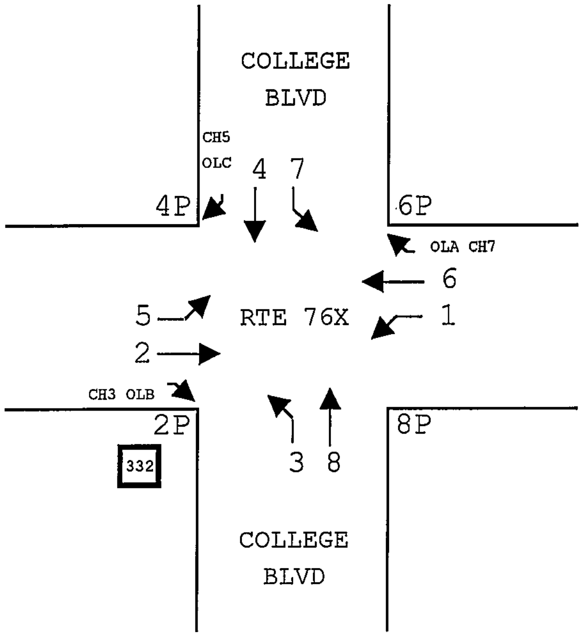
8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

DATE: 10/20/93

LOCATION: RTE 76 EXPRESSWAY @ COLLEGE BLVD

CONFLICT MONITOR PROGRAM



	2	3 (+OLB)	4	5 (+OLC)	6	7 (+OLA)	8	9	10	11	12	13 (2P)	14 (4P)	15 (6P)	16 (8P)	DIODE CUT OUT LIST:
FZ 1	C	C	C	X	X	C	C	X	X			C	C	X	C	1-5,6,9,10,15
FZ 2		C	C	X	X	C	C	X	X			X	C	X	C	2-5,6,9,10,13,15
OLB + FZ 3			C	C	C	X	X	X	X			C	C	C	X	3-7,8,9,10,16
FZ 4				C	C	X	X	X	X			C	X	C	X	4-7,8,9,10,14,16
OLC + FZ 5					C	C	C	X	X			X	C	C	C	5-9,10,13
FZ 6						C	C	X	X			X	C	X	C	6-9,10,13,15
OLA + FZ 7							C	X	X			C	X	C	C	7-9,10,14
FZ 8								X	X			C	X	C	X	8-9,10,14,16
RTOLA 9									X			X	X	X	X	9-10,13,14,15,16
RTOLB 10												X	X	X	X	10-13,14,15,16
AUX 1 11																
AUX 2 12																
FZ 2 P 13													C	X	C	13-15
FZ 4 P 14														C	X	14-16
FZ 6 P 15															C	
FZ 8 P 16																

C = CONFLICTING CHANNELS

X = CONCURRENT CHANNELS (REMOVE DIODE)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	76	R6.3/R8.1	206	254

REGISTERED CIVIL ENGINEER

2-26-96
PLANS APPROVAL DATE

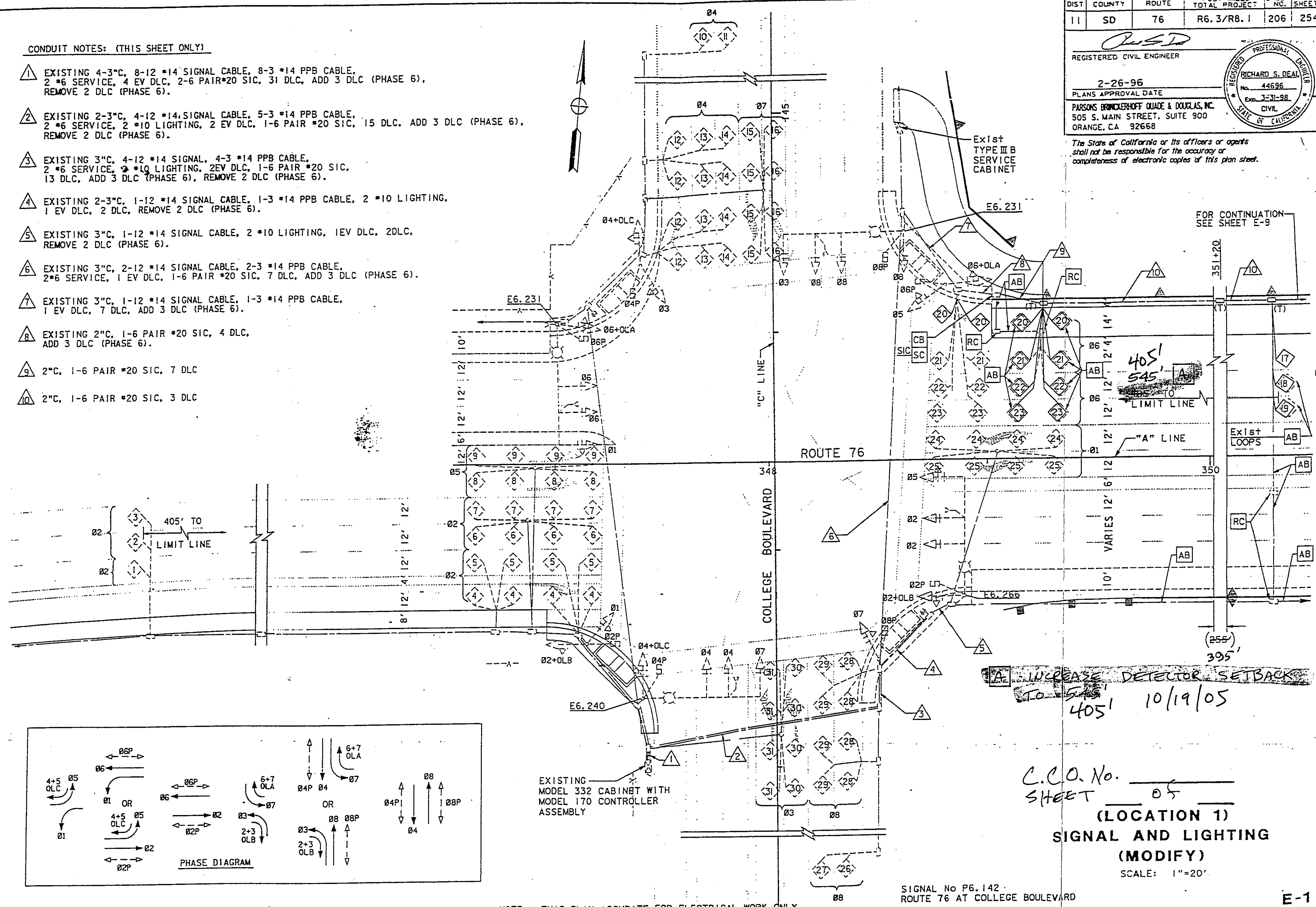
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.
505 S. MAIN STREET, SUITE 900
ORANGE, CA 92668

REGISTERED PROFESSIONAL ENGINEER
RICHARD S. DEAL
No. 44696
Exp. 3-31-98
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

CONDUIT NOTES: (THIS SHEET ONLY)

1. EXISTING 4-3"C, 8-12 #14 SIGNAL CABLE, 8-3 #14 PPB CABLE, 2 #6 SERVICE, 4 EV DLC, 2-6 PAIR #20 SIC, 31 DLC, ADD 3 DLC (PHASE 6), REMOVE 2 DLC (PHASE 6).
2. EXISTING 2-3"C, 4-12 #14 SIGNAL CABLE, 5-3 #14 PPB CABLE, 2 #6 SERVICE, 2 #10 LIGHTING, 2 EV DLC, 1-6 PAIR #20 SIC, 15 DLC, ADD 3 DLC (PHASE 6), REMOVE 2 DLC (PHASE 6).
3. EXISTING 3"C, 4-12 #14 SIGNAL, 4-3 #14 PPB CABLE, 2 #6 SERVICE, 2 #10 LIGHTING, 2EV DLC, 1-6 PAIR #20 SIC, 13 DLC, ADD 3 DLC (PHASE 6), REMOVE 2 DLC (PHASE 6).
4. EXISTING 2-3"C, 1-12 #14 SIGNAL CABLE, 1-3 #14 PPB CABLE, 2 #10 LIGHTING, 1 EV DLC, 2 DLC, REMOVE 2 DLC (PHASE 6).
5. EXISTING 3"C, 1-12 #14 SIGNAL CABLE, 2 #10 LIGHTING, 1EV DLC, 2DLC, REMOVE 2 DLC (PHASE 6).
6. EXISTING 3"C, 2-12 #14 SIGNAL CABLE, 2-3 #14 PPB CABLE, 2 #6 SERVICE, 1 EV DLC, 1-6 PAIR #20 SIC, 7 DLC, ADD 3 DLC (PHASE 6).
7. EXISTING 3"C, 1-12 #14 SIGNAL CABLE, 1-3 #14 PPB CABLE, 1 EV DLC, 7 DLC, ADD 3 DLC (PHASE 6).
8. EXISTING 2"C, 1-6 PAIR #20 SIC, 4 DLC, ADD 3 DLC (PHASE 6).
9. 2"C, 1-6 PAIR #20 SIC, 7 DLC
10. 2"C, 1-6 PAIR #20 SIC, 3 DLC



C.C.O. No. ______
SHEET 05

(LOCATION 1)
SIGNAL AND LIGHTING
(MODIFY)
SCALE: 1"=20'

SIGNAL No P6.142
ROUTE 76 AT COLLEGE BOULEVARD

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

E-1

STATE OF CALIFORNIA · DEPARTMENT OF TRANSPORTATION
DESIGN OVERSIGHT: R. CHAVEZ
CALCULATED/DESIGNED BY: DS | CHECKED BY: RD | DATE REVISED: 6/95

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

USERNAME => trjimt
DGN FILE => b01003u0105081343

CU 11273 | EA 01003

FORM DC-OE-92-PF (REV. 3/88)

INTERSECTION: North River & Vandegrift/Red

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **82**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **5/24/2021 16:50**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	**15**	<C+0+0>
Zone Number		<C+0+1>
Area Number	**1**	<C+0+2>
Area Address	**82**	<C+0+3>
QuicNet Channel	**Serial:COM20:**	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	**20**	<F+0+E>
Red Revert	**2.0**	<F+0+F>
All Red Start	**5.0**	<F+C+0>

Start / Revert Times

		Phase							
	Column Numbers ---->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Row	*Phase Names ---->*								
0	Ped Walk	**0**	**7**	**0**	**4**	**0**	**7**	**0**	**4**
1	Ped FDW	**0**	**20**	**0**	**22**	**0**	**16**	**0**	**20**
2	Min Green	**5**	**10**	**5**	**6**	**5**	**10**	**5**	**8**
3	Type 3 Limit	**0**	**99**	**0**	**0**	**0**	**99**	**0**	**0**
4	Added Initial	**0.0**	**2.0**	**0.0**	**0.0**	**0.0**	**2.0**	**0.0**	**0.0**
5	Veh Extension	**2.5**	**4.5**	**2.5**	**3.0**	**2.5**	**4.5**	**2.5**	**3.0**
6	Max Gap	**2.5**	**8.0**	**2.5**	**3.0**	**2.5**	**8.0**	**2.5**	**3.0**
7	Min Gap	**2.5**	**4.0**	**2.5**	**3.0**	**2.5**	**4.0**	**2.5**	**3.0**
8	Max Limit	**20**	**60**	**25**	**25**	**60**	**40**	**20**	**25**
9	Max Limit 2	**30**	**40**	**30**	**30**	**30**	**40**	**30**	**30**
A	- - - - - -	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
B	Call To Phase	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C	Reduce By	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**
D	Reduce Every	**0.0**	**1.2**	**0.0**	**0.0**	**0.0**	**1.2**	**0.0**	**0.0**
E	Yellow Change	**4.1**	**4.8**	**4.1**	**4.8**	**4.1**	**4.8**	**4.1**	**4.8**
F	Red Clear	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**

Phase Timing - Bank 1 <F Page>

	E
RR-1 Delay	**0**
RR-1 Clear	**10**
EV-A Delay	**0**
EV-A Clear	**5**
EV-B Delay	**0**
EV-B Clear	**5**
EV-C Delay	**0**
EV-C Clear	**5**
EV-D Delay	**0**
EV-D Clear	**5**
RR-2 Delay	**0**
RR-2 Clear	**10**
View EV Delay	**- - -**
View EV Clear	**- - -**
View RR Delay	**- - -**
View RR Clear	**- - -**

Preempt Timing

	F	Row
Permit	**12345678**	**0**
Red Lock	________	**1**
Yellow Lock	________	**2**
Min Recall	**_2___6__**	**3**
Ped Recall	________	**4**
View Set Peds	**- - - - -**	**5**
Rest In Walk	________	**6**
Red Rest	________	**7**
Dual Entry	**_2_4_6_8**	**8**
Max Recall	________	**9**
Soft Recall	________	**A**
Max 2	________	**B**
Cond. Service	**1_______**	**C**
Man Cntrl Calls	________	**D**
Yellow Start	**1___5___**	**E**
First Phases	**_2___6__**	**F**

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

(* = Coordination Recall)

Coordination <C Page>

Row	Column Numbers ---->	1	2	3	4	5	6	7	8	9	Row
Row	Plan Name ---->										Row
0	Cycle Length	100	100	130	100	90	140	120	100	120	0
1	Phase 1 - ForceOff	65	25	72	75	60	100	75	65	25	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	25	45	34	40	26	48	26	25	45	3
4	Phase 4 - ForceOff	50	60	52	55	41	68	55	50	75	4
5	Phase 5 - ForceOff	65	25	95	17	60	100	75	65	100	5
6	Phase 6 - ForceOff	0	0	0	0	0	18	0	0	0	6
7	Phase 7 - ForceOff	20	40	18	1	1	42	20	25	40	7
8	Phase 8 - ForceOff	50	60	52	1	1	68	55	40	75	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	57	40	60	47	16	60	94	0	40	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	5	5	16	5	12	19	12	12	12	D
E	Hold Release	90	85	255	90	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Sync Phases <C Page>

	E	Row
		0
Plan 1 - Sync	_2___6__	1
Plan 2 - Sync	_2___6__	2
Plan 3 - Sync	_2___6__	3
Plan 4 - Sync	_2___6__	4
Plan 5 - Sync	_2___6__	5
Plan 6 - Sync	_2___6__	6
Plan 7 - Sync	_2___6__	7
Plan 8 - Sync	_2___6__	8
Plan 9 - Sync	_2___6__	9
Coord Ped *	________	A
NEMA Hold	________	B
		C
		D
		E
		F

Configuration <E Page>

Row	Column Numbers ---->	E
0	Exclusive Phases	________
1	RR-1 Clear Phases	________
2	RR-2 Clear Phases	________
3	RR-2 Limited Service	________
4	Prot / Perm Phases	________
5	Overlap A - Green Omit	________
6	Overlap B - Green Omit	________
7	Overlap C - Green Omit	________
8	Overlap D - Green Omit	________
9	Overlap Yellow Flash	________
A	EV-A Phases	_2__5___
B	EV-B Phases	___4__7_
C	EV-C Phases	1____6__
D	EV-D Phases	__3____8
E	Extra 1 Config. Bits	1__4____
F	IC Select (Interconnect)	_2______

Configuration <E Page>

	F
RR Overlap A - Phases	________
RR Overlap B - Phases	________
RR Overlap C - Phases	________
RR Overlap D - Phases	________
Ped 2P	_2______
Ped 6P	_____6__
Ped 4P	___4____
Ped 8P	_______8
Yellow Flash Phases	________
Overlap A - Phases	________
Overlap B - Phases	________
Overlap C - Phases	________
Overlap D - Phases	________
Restricted Phases	________
Assign 5 Outputs	________

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	_2_4_6_8	0
Plan 1 - Lag	_2_4_6_8	1
Plan 2 - Lag	1__45__8	2
Plan 3 - Lag	_2_4_6_8	3
Plan 4 - Lag	_2_45__8	4
Plan 5 - Lag	_2_4_6_8	5
Plan 6 - Lag	_2_4_6_8	6
Plan 7 - Lag	_2_4_6_8	7
Plan 8 - Lag	_2_4_6_8	8
Plan 9 - Lag	1__4_6_8	9
Coord Max *	________	A
Coord Lag *	________	B
		C
		D
		E
		F

TOD Coordination
<9 Key with C+D+9=0>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	7	A	_23456_
2	09 : 00	E	A	_23456_
3	15 : 00	6	A	_23456_
4	17 : 30	E	A	_23456_
5	00 : 00	0	0	_______
6	00 : 00	0	0	_______
7	00 : 00	0	0	_______
8	00 : 00	0	0	_______
9	00 : 00	0	0	_______
A	00 : 00	0	0	_______
B	00 : 00	0	0	_______
C	00 : 00	0	0	_______
D	00 : 00	0	0	_______
E	00 : 00	0	0	_______
F	00 : 00	0	0	_______

TOD Function
<7 Key>
Column F: <D Page>

Row	Time	Funct.	Day of Week	Column F Phases/Bits
0	15 : 00	C	_23456_	1_______
1	18 : 00	C	_23456_	_______
2	00 : 00	0	_______	_______
3	00 : 00	0	_______	_______
4	00 : 00	0	_______	_______
5	00 : 00	0	_______	_______
6	00 : 00	0	_______	_______
7	00 : 00	0	_______	_______
8	00 : 00	0	_______	_______
9	00 : 00	0	_______	_______
A	00 : 00	0	_______	_______
B	00 : 00	0	_______	_______
C	00 : 00	0	_______	_______
D	00 : 00	0	_______	_______
E	00 : 00	0	_______	_______
F	00 : 00	0	_______	_______

Holiday # 1 TOD Coordination <9 Key with C+D+9=1>
Holiday # 2 TOD Coordination <9 Key with C+D+9=2>
Holiday # 3 TOD Coordination <9 Key with C+D+9=3>

Row	H1 Time	H1 Plan	H1 Offset	H1 Day of Week	H2 Time	H2 Plan	H2 Offset	H2 Day of Week	H3 Time	H3 Plan	H3 Offset	H3 Day of Week
0	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
1	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
2	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
3	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
4	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
5	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
6	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
7	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
8	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
9	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
A	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
B	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
C	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
D	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
E	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______
F	00 : 00	0	0	_______	00 : 00	0	0	_______	00 : 00	0	0	_______

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector
OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Holiday Dates
<8 Key>

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	_______
B	Holiday # 2 Date	0	0	0	_______
C	Holiday # 3 Date	0	0	0	_______

Detector Delay & Carryover <D Page>

Row	Delay (1)	Carry-over (3)	Detector Name	332 Input File	Detector Number
0	1.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	0.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	- - -	- - -	- - -	- - -	- - -
F	- - -	- - -	- - -	- - -	- - -

Row	Delay (2)	Carry-over (4)	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	10.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	- - -	- - -	- - -	- - -	- - -
F	- - -	- - -	- - -	- - -	- - -

Overlap Timing <F Page> / <D Page>

Row		Green Clear (9)	Yellow Change (C)	Red Clear (D)	Load-Switch # (0)
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Active Detectors <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

System Detectors <D Page>

Row		Detector Number (0)
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

Detector Failure Monitor

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 2

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Power Cycle Correction (Default = 0.5)

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Dial-Up Telephone Communications

Disable Parity	0	<D+B+0>

(If set to a non-zero value, parity will be disabled)

Row	Phase → / Column Numbers ---->	1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	- - - - - -	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Phase → / Column Numbers ---->	1	2	3	4	5	6	7	8	Row
Phase Names ---->									
Ped Walk	0	7	0	7	0	7	0	7	0
Ped FDW	0	10	0	10	0	10	0	10	1
Min Green	3	7	3	7	3	7	3	7	2
Type 3 Limit	0	0	0	0	0	0	0	0	3
Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2	4
Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5	5
Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	6
Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	7
Max Limit	17	40	17	40	17	40	17	40	8
Max Limit 2	30	70	30	70	30	70	30	70	9
- - - - - -	0	0	0	0	0	0	0	0	A
Call To Phase	0	0	0	0	0	0	0	0	B
Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	C
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	D
Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	E
Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0	F

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
0	Delay Only --->	0	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	0	
1		0	0								1	
2		0	0								2	
3		0	0								3	
4		0	0								4	
5		0	0								5	
6		0	0								6	
7		0	0								7	
8		0	0								8	
9		0	0								9	
A	Limited Service Int. --->	- - -	0								A	<--- Limited Service Interval (Set Dwell = 255)
B		0	0								B	
C		0	0								C	
D		0	0								D	
E		0	0								E	
F		0	0								F	

Special Event Schedule <C Page with F+9+F=22>

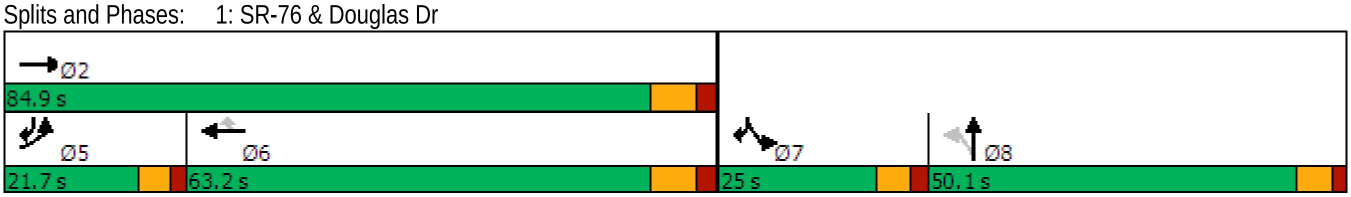
Appendix F

Existing Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	239	870	1761	205	247	490	
Future Volume (vph)	239	870	1761	205	247	490	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	21.7	84.9	63.2	63.2	25.0		50.1
Total Split (%)	13.6%	53.1%	39.5%	39.5%	15.6%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	14.5	75.4	55.2	55.2	18.9	39.5	
Actuated g/C Ratio	0.13	0.70	0.51	0.51	0.17	0.36	
v/c Ratio	0.57	0.38	1.06	0.24	0.87	0.39	
Control Delay	49.2	7.4	67.3	2.7	71.6	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	49.2	7.4	67.3	2.7	71.6	2.9	
LOS	D	A	E	A	E	A	
Approach Delay		16.4	60.5				
Approach LOS		B	E				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 108.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	870	0	0	1761	205	0	0	0	247	0	490
Future Volume (veh/h)	239	870	0	0	1761	205	0	0	0	247	0	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	260	946	0	0	1914	223	0	0	0	268	0	533
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	425	2484	0	0	1856	828	0	2	0	299	0	0
Arrive On Green	0.12	0.70	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.17	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	268	
Grp Volume(v), veh/h	260	946	0	0	1914	223	0	0	0	268	68.6	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	7.5	11.5	0.0	0.0	55.2	8.3	0.0	0.0	0.0	15.6		
Cycle Q Clear(g_c), s	7.5	11.5	0.0	0.0	55.2	8.3	0.0	0.0	0.0	15.6		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	425	2484	0	0	1856	828	0	2	0	299		
V/C Ratio(X)	0.61	0.38	0.00	0.00	1.03	0.27	0.00	0.00	0.00	0.90		
Avail Cap(c_a), veh/h	523	2585	0	0	1856	828	0	778	0	318		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	44.0	6.5	0.0	0.0	25.3	14.0	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	1.4	0.1	0.0	0.0	29.5	0.2	0.0	0.0	0.0	25.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	3.9	0.0	0.0	29.3	2.9	0.0	0.0	0.0	8.9		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	6.6	0.0	0.0	54.7	14.2	0.0	0.0	0.0	68.6		
LnGrp LOS	D	A	A	A	F	B	A	A	A	E		
Approach Vol, veh/h		1206			2137			0				
Approach Delay, s/veh		15.0			50.5			0.0				
Approach LOS		B			D							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		81.9			18.7	63.2	23.8	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		76.9			* 16	55.2	18.9	44.0				
Max Q Clear Time (g_c+I1), s		13.5			9.5	57.2	17.6	0.0				
Green Ext Time (p_c), s		5.5			0.6	0.0	0.1	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			40.0
HCM 6th LOS			D

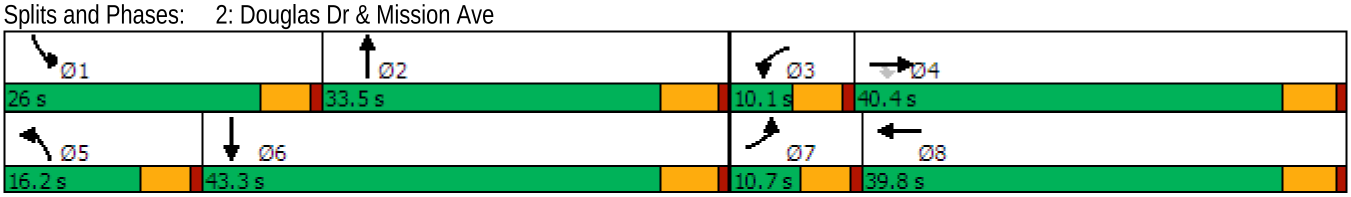
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	258	62	47	430	111	291	378	676
Future Volume (vph)	66	258	62	47	430	111	291	378	676
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.7	40.4	40.4	10.1	39.8	16.2	33.5	26.0	43.3
Total Split (%)	9.7%	36.7%	36.7%	9.2%	36.2%	14.7%	30.5%	23.6%	39.4%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.9	24.3	24.3	5.2	23.9	10.2	16.8	21.9	28.5
Actuated g/C Ratio	0.07	0.28	0.28	0.06	0.27	0.12	0.19	0.25	0.33
v/c Ratio	0.31	0.29	0.12	0.49	0.79	0.59	0.48	0.93	0.71
Control Delay	49.0	26.5	0.4	62.5	29.6	54.2	34.6	66.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	26.5	0.4	62.5	29.6	54.2	34.6	66.4	31.2
LOS	D	C	A	E	C	D	C	E	C
Approach Delay		26.2			31.6		39.9		43.1
Approach LOS		C			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 87.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	258	62	47	430	318	111	291	9	378	676	71
Future Volume (veh/h)	66	258	62	47	430	318	111	291	9	378	676	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	280	67	51	467	346	121	316	10	411	735	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1068	476	77	570	421	166	447	14	452	932	98
Arrive On Green	0.05	0.30	0.30	0.04	0.29	0.29	0.09	0.13	0.13	0.25	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	1949	1439	1781	3516	111	1781	3246	340
Grp Volume(v), veh/h	72	280	67	51	426	387	121	159	167	411	402	410
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1611	1781	1777	1850	1781	1777	1809
Q Serve(g_s), s	1.6	4.6	2.4	2.2	17.3	17.4	5.1	6.7	6.7	17.4	16.2	16.2
Cycle Q Clear(g_c), s	1.6	4.6	2.4	2.2	17.3	17.4	5.1	6.7	6.7	17.4	16.2	16.2
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.06	1.00		0.19
Lane Grp Cap(c), veh/h	176	1068	476	77	520	471	166	226	235	452	510	520
V/C Ratio(X)	0.41	0.26	0.14	0.67	0.82	0.82	0.73	0.71	0.71	0.91	0.79	0.79
Avail Cap(c_a), veh/h	250	1604	715	115	788	715	255	635	661	480	859	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	20.6	19.8	36.6	25.5	25.5	34.2	32.5	32.5	28.1	25.5	25.5
Incr Delay (d2), s/veh	1.5	0.1	0.1	9.5	4.1	4.7	5.9	4.0	3.9	20.6	2.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	0.9	1.1	7.5	6.9	2.4	3.0	3.2	9.6	6.9	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	20.7	19.9	46.1	29.7	30.2	40.1	36.5	36.4	48.7	28.2	28.2
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	C	C
Approach Vol, veh/h		419			864			447			1223	
Approach Delay, s/veh		23.4			30.9			37.4			35.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.8	15.7	8.4	28.7	12.3	28.1	9.0	28.1
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	20.9	27.7	5.0	35.0	11.1	37.5	5.6	34.4
Max Q Clear Time (g_c+I1), s	19.4	8.7	4.2	6.6	7.1	18.2	3.6	19.4
Green Ext Time (p_c), s	0.3	1.2	0.0	1.6	0.1	3.4	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

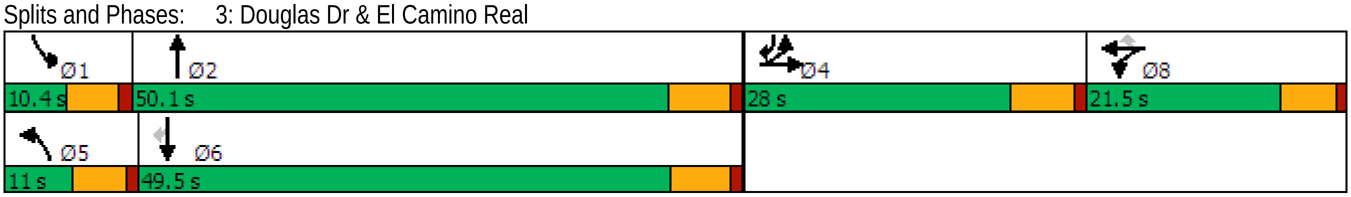
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	321	17	36	33	1	40	549	8	1042	1085
Future Volume (vph)	321	17	36	33	1	40	549	8	1042	1085
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	28.0	28.0		21.5	21.5	11.0	50.1	10.4	49.5	28.0
Total Split (%)	25.5%	25.5%		19.5%	19.5%	10.0%	45.5%	9.5%	45.0%	25.5%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	19.3	19.3	87.2	11.5	11.5	6.2	39.4	5.6	35.9	64.2
Actuated g/C Ratio	0.22	0.22	1.00	0.13	0.13	0.07	0.45	0.06	0.41	0.74
v/c Ratio	0.46	0.04	0.02	0.47	0.00	0.34	0.40	0.08	0.78	0.57
Control Delay	35.9	34.9	0.0	48.4	0.0	55.8	18.2	51.0	29.1	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	34.9	0.0	48.4	0.0	55.8	18.2	51.0	29.1	10.2
LOS	D	C	A	D	A	E	B	D	C	B
Approach Delay		32.4		48.0			20.5		19.6	
Approach LOS		C		D			C		B	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 87.2	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 22.2	Intersection LOS: C
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	17	36	69	33	1	40	549	36	8	1042	1085
Future Volume (veh/h)	321	17	36	69	33	1	40	549	36	8	1042	1085
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	18	0	75	36	1	43	597	39	9	1133	1179
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	256		98	47	127	68	1658	108	20	1645	1673
Arrive On Green	0.14	0.14	0.00	0.08	0.08	0.08	0.04	0.49	0.49	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1222	587	1585	1781	3387	221	1781	3554	2790
Grp Volume(v), veh/h	349	18	0	111	0	1	43	313	323	9	1133	1179
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1831	1781	1777	1395
Q Serve(g_s), s	8.0	0.7	0.0	5.0	0.0	0.0	2.0	9.0	9.0	0.4	20.8	24.2
Cycle Q Clear(g_c), s	8.0	0.7	0.0	5.0	0.0	0.0	2.0	9.0	9.0	0.4	20.8	24.2
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	474	256		145	0	127	68	870	896	20	1645	1673
V/C Ratio(X)	0.74	0.07		0.77	0.00	0.01	0.64	0.36	0.36	0.45	0.69	0.70
Avail Cap(c_a), veh/h	912	493		350	0	307	121	944	973	108	1871	1851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	31.1	0.0	37.2	0.0	35.0	39.2	13.1	13.1	40.6	17.5	11.5
Incr Delay (d2), s/veh	2.3	0.1	0.0	8.1	0.0	0.0	9.5	0.3	0.2	14.8	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.3	0.0	2.5	0.0	0.0	1.0	3.4	3.5	0.3	8.1	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	31.2	0.0	45.3	0.0	35.0	48.7	13.3	13.3	55.4	18.4	12.6
LnGrp LOS	D	C		D	A	D	D	B	B	E	B	B
Approach Vol, veh/h		367	A		112			679			2321	
Approach Delay, s/veh		36.2			45.3			15.6			15.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	46.6		17.5	8.5	44.4		12.1
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	43.9		21.8	5.6	* 44		16.0
Max Q Clear Time (g_c+I1), s	2.4	11.0		10.0	4.0	26.2		7.0
Green Ext Time (p_c), s	0.0	2.7		1.3	0.0	12.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

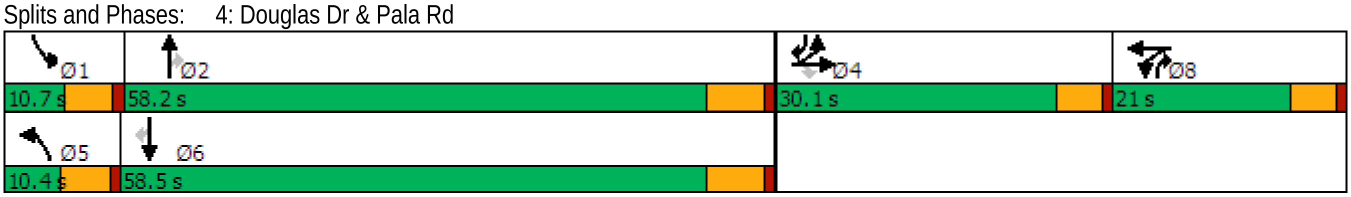
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	3	92	9	2	37	845	16	15	1875	67
Future Volume (vph)	66	3	92	9	2	37	845	16	15	1875	67
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	58.2	21.0	10.7	58.5	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	8.7%	48.5%	17.5%	8.9%	48.8%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.1	10.1	10.1	6.6	6.6	5.1	58.7	64.6	5.4	56.8	75.6
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.06	0.65	0.71	0.06	0.63	0.83
v/c Ratio	0.20	0.20	0.35	0.08	0.20	0.40	0.40	0.01	0.15	0.92	0.05
Control Delay	39.8	39.7	7.4	46.4	22.5	58.5	11.6	0.0	50.1	27.8	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	39.7	7.4	46.4	22.5	58.5	11.6	0.0	50.1	27.8	1.1
LOS	D	D	A	D	C	E	B	A	D	C	A
Approach Delay		21.3			28.8		13.3			27.1	
Approach LOS		C			C		B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	3	92	9	2	24	37	845	16	15	1875	67
Future Volume (veh/h)	66	3	92	9	2	24	37	845	16	15	1875	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	0	100	10	2	26	40	918	17	16	2038	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	0	142	73	5	61	63	2150	1024	33	2090	1074
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.04	0.61	0.61	0.02	0.59	0.59
Sat Flow, veh/h	3563	0	1585	1781	114	1488	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	74	0	100	10	0	28	40	918	17	16	2038	73
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1603	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	5.4	0.5	0.0	1.5	2.0	12.2	0.3	0.8	49.1	1.4
Cycle Q Clear(g_c), s	1.7	0.0	5.4	0.5	0.0	1.5	2.0	12.2	0.3	0.8	49.1	1.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	0	142	73	0	66	63	2150	1024	33	2090	1074
V/C Ratio(X)	0.23	0.00	0.70	0.14	0.00	0.42	0.64	0.43	0.02	0.49	0.98	0.07
Avail Cap(c_a), veh/h	1004	0	447	319	0	287	100	2150	1024	106	2095	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	39.2	41.0	0.0	41.5	42.2	9.3	5.6	43.1	17.6	4.8
Incr Delay (d2), s/veh	0.4	0.0	6.2	0.8	0.0	4.3	10.2	0.1	0.0	10.9	14.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.3	0.2	0.0	0.7	1.0	4.3	0.1	0.4	21.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	0.0	45.4	41.9	0.0	45.8	52.4	9.5	5.6	54.0	31.9	4.9
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	C	A
Approach Vol, veh/h		174			38			975			2127	
Approach Delay, s/veh		42.2			44.8			11.2			31.1	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	59.9		13.1	8.5	58.4		8.7
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.3	52.0		25.0	5.0	52.3		15.9
Max Q Clear Time (g_c+I1), s	2.8	14.2		7.4	4.0	51.1		3.5
Green Ext Time (p_c), s	0.0	5.3		0.6	0.0	1.0		0.1

Intersection Summary			
HCM 6th Ctrl Delay			26.0
HCM 6th LOS			C

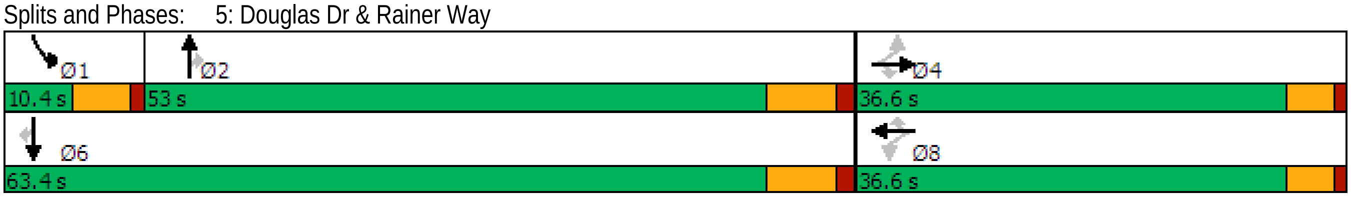
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	2	109	67	4	6	925	31	2	1787	37
Future Volume (vph)	15	2	109	67	4	6	925	31	2	1787	37
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.3	12.3		12.3	12.3	51.2	51.2	5.1	52.8	52.8
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.67	0.67	0.07	0.69	0.69
v/c Ratio		0.08	0.35		0.36	0.02	0.43	0.03	0.02	0.80	0.04
Control Delay		27.3	11.4		33.2	0.2	9.1	0.3	41.0	13.7	4.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		27.3	11.4		33.2	0.2	9.1	0.3	41.0	13.7	4.5
LOS		C	B		C	A	A	A	D	B	A
Approach Delay		13.5			30.4		8.8			13.6	
Approach LOS		B			C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	2	109	67	4	6	0	925	31	2	1787	37
Future Volume (veh/h)	15	2	109	67	4	6	0	925	31	2	1787	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	2	118	73	4	7	0	1005	34	2	1942	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	80	6	505	83	3	505	0	1807	806	5	2012	897
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.00	0.51	0.51	0.00	0.57	0.57
Sat Flow, veh/h	34	19	1585	36	9	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	18	0	118	77	0	7	0	1005	34	2	1942	40
Grp Sat Flow(s),veh/h/ln	53	0	1585	45	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.8	0.0	5.4	0.9	0.0	0.3	0.0	19.0	1.1	0.1	51.3	1.1
Cycle Q Clear(g_c), s	31.3	0.0	5.4	31.3	0.0	0.3	0.0	19.0	1.1	0.1	51.3	1.1
Prop In Lane	0.89		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	0	505	86	0	505	0	1807	806	5	2012	897
V/C Ratio(X)	0.21	0.00	0.23	0.90	0.00	0.01	0.00	0.56	0.04	0.43	0.97	0.04
Avail Cap(c_a), veh/h	96	0	516	95	0	516	0	1807	806	91	2052	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	24.6	48.2	0.0	22.9	0.0	16.5	12.1	48.9	20.4	9.5
Incr Delay (d2), s/veh	1.2	0.0	0.2	57.9	0.0	0.0	0.0	0.4	0.0	51.2	12.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.0	3.3	0.0	0.1	0.0	7.5	0.4	0.1	22.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	0.0	24.9	106.0	0.0	22.9	0.0	16.9	12.1	100.1	33.0	9.5
LnGrp LOS	D	A	C	F	A	C	A	B	B	F	C	A
Approach Vol, veh/h		136			84			1039			1984	
Approach Delay, s/veh		27.1			99.1			16.8			32.6	
Approach LOS		C			F			B			C	

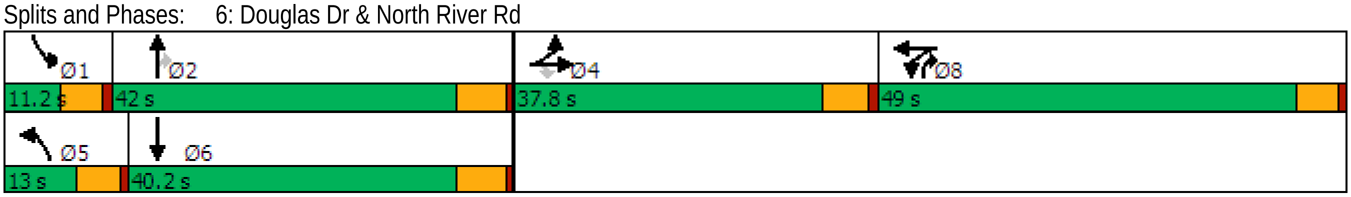
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.7	56.9		36.3		62.6		36.3				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.1	21.0		33.3		53.3		33.3				
Green Ext Time (p_c), s	0.0	5.7		0.0		2.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			29.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	94	186	882	47	71	431	349	18	703
Future Volume (vph)	53	94	186	882	47	71	431	349	18	703
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	49.0	49.0	13.0	42.0	49.0	11.2	40.2
Total Split (%)	27.0%	27.0%	27.0%	35.0%	35.0%	9.3%	30.0%	35.0%	8.0%	28.7%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	15.8	15.8	15.8	42.5	42.5	7.7	41.8	88.6	5.8	32.8
Actuated g/C Ratio	0.13	0.13	0.13	0.35	0.35	0.06	0.34	0.73	0.05	0.27
v/c Ratio	0.25	0.22	0.68	0.85	0.49	0.69	0.39	0.18	0.24	0.81
Control Delay	50.0	48.1	34.7	53.7	34.0	89.1	34.2	0.9	67.7	50.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	48.1	34.7	53.7	34.0	89.1	34.2	0.9	67.7	50.5
LOS	D	D	C	D	C	F	C	A	E	D
Approach Delay		40.9			43.2		25.1			50.9
Approach LOS		D			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 121.8	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 39.5	Intersection LOS: D
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	94	186	882	47	21	71	431	349	18	703	9
Future Volume (veh/h)	53	94	186	882	47	21	71	431	349	18	703	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	102	202	959	51	23	77	468	379	20	764	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	566	252	1153	395	178	98	1038	1718	37	926	12
Arrive On Green	0.16	0.16	0.16	0.32	0.32	0.32	0.06	0.29	0.29	0.02	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	3563	1221	551	1781	3554	2790	1781	3592	47
Grp Volume(v), veh/h	58	102	202	959	0	74	77	468	379	20	378	396
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1771	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	3.2	2.8	13.7	27.8	0.0	3.3	4.8	12.0	6.7	1.2	22.4	22.4
Cycle Q Clear(g_c), s	3.2	2.8	13.7	27.8	0.0	3.3	4.8	12.0	6.7	1.2	22.4	22.4
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	284	566	252	1153	0	573	98	1038	1718	37	458	480
V/C Ratio(X)	0.20	0.18	0.80	0.83	0.00	0.13	0.78	0.45	0.22	0.54	0.83	0.83
Avail Cap(c_a), veh/h	510	1018	454	1391	0	692	121	1139	1797	93	541	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	40.6	45.2	34.9	0.0	26.7	52.1	32.2	9.5	54.2	39.1	39.1
Incr Delay (d2), s/veh	0.5	0.2	8.1	4.2	0.0	0.1	23.0	0.7	0.1	11.8	11.0	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	5.9	12.5	0.0	1.4	2.8	5.2	4.2	0.7	11.1	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	40.8	53.3	39.1	0.0	26.8	75.1	32.9	9.7	66.0	50.1	49.6
LnGrp LOS	D	D	D	D	A	C	E	C	A	E	D	D
Approach Vol, veh/h		362			1033			924			794	
Approach Delay, s/veh		47.9			38.2			26.9			50.3	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	38.8		23.6	11.6	35.0		41.5				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	5.8	35.8		32.0	7.6	34.0		43.6				
Max Q Clear Time (g_c+I1), s	3.2	14.0		15.7	6.8	24.4		29.8				
Green Ext Time (p_c), s	0.0	8.4		2.1	0.0	4.4		6.3				

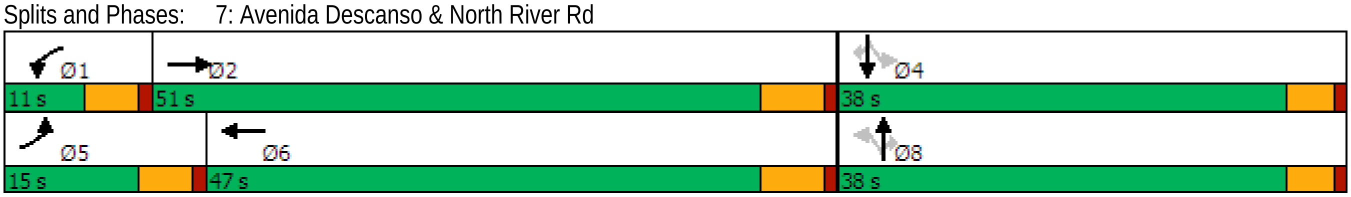
Intersection Summary			
HCM 6th Ctrl Delay			39.0
HCM 6th LOS			D

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	420	18	785	2	2	30	111	12	104
Future Volume (vph)	51	420	18	785	2	2	30	111	12	104
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	15.0	51.0	11.0	47.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	15.0%	51.0%	11.0%	47.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	8.2	27.6	6.7	22.3		13.7	13.7		13.7	13.7
Actuated g/C Ratio	0.15	0.50	0.12	0.41		0.25	0.25		0.25	0.25
v/c Ratio	0.21	0.26	0.09	0.63		0.01	0.07		0.39	0.24
Control Delay	31.1	9.4	33.9	17.3		19.8	0.3		24.1	6.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	31.1	9.4	33.9	17.3		19.8	0.3		24.1	6.2
LOS	C	A	C	B		B	A		C	A
Approach Delay		11.7		17.6		2.4			15.9	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 54.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	420	5	18	785	44	2	2	30	111	12	104
Future Volume (veh/h)	51	420	5	18	785	44	2	2	30	111	12	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	457	5	20	853	48	2	2	33	121	13	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	1190	13	40	1053	59	72	50	700	96	6	700
Arrive On Green	0.05	0.33	0.33	0.02	0.31	0.31	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1781	3601	39	1781	3420	192	2	114	1585	12	13	1585
Grp Volume(v), veh/h	55	225	237	20	443	458	4	0	33	134	0	113
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1836	116	0	1585	25	0	1585
Q Serve(g_s), s	2.3	7.3	7.4	0.8	17.4	17.4	0.1	0.0	0.9	0.3	0.0	3.2
Cycle Q Clear(g_c), s	2.3	7.3	7.4	0.8	17.4	17.4	33.4	0.0	0.9	33.4	0.0	3.2
Prop In Lane	1.00		0.02	1.00		0.10	0.50		1.00	0.90		1.00
Lane Grp Cap(c), veh/h	80	587	616	40	547	565	123	0	700	102	0	700
V/C Ratio(X)	0.68	0.38	0.38	0.50	0.81	0.81	0.03	0.00	0.05	1.31	0.00	0.16
Avail Cap(c_a), veh/h	233	1063	1115	139	969	1001	123	0	701	102	0	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	19.4	19.4	36.5	24.1	24.1	18.3	0.0	12.0	36.0	0.0	12.7
Incr Delay (d2), s/veh	9.8	0.4	0.4	9.2	2.9	2.8	0.1	0.0	0.0	195.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.9	3.1	0.5	7.3	7.5	0.0	0.0	0.3	7.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	19.8	19.8	45.7	27.0	26.9	18.4	0.0	12.1	231.2	0.0	12.8
LnGrp LOS	D	B	B	D	C	C	B	A	B	F	A	B
Approach Vol, veh/h		517			921			37			247	
Approach Delay, s/veh		22.5			27.4			12.7			131.3	
Approach LOS		C			C			B			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	30.8		38.0	8.5	29.1		38.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	5.9	45.2		33.4	9.9	41.2		33.4
Max Q Clear Time (g_c+I1), s	2.8	9.4		35.4	4.3	19.4		35.4
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	4.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			40.5
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	547	853	7	9	26
Future Vol, veh/h	12	547	853	7	9	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	595	927	8	10	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	935	0	-	0	1255	468
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	728	-	-	-	164	542
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	728	-	-	-	161	542
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	705	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	728	-	-	-	337
HCM Lane V/C Ratio	0.018	-	-	-	0.113
HCM Control Delay (s)	10	-	-	-	17
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	537	0	0	818	5	0	0	0	15	0	40
Future Vol, veh/h	22	537	0	0	818	5	0	0	0	15	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	584	0	0	889	5	0	0	0	16	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	894	0	0	584	0	0	-	-	292	1232	1524	447
Stage 1	-	-	-	-	-	-	-	-	-	892	892	-
Stage 2	-	-	-	-	-	-	-	-	-	340	632	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	755	-	-	987	-	-	0	0	704	133	117	559
Stage 1	-	-	-	-	-	-	0	0	-	303	358	-
Stage 2	-	-	-	-	-	-	0	0	-	648	472	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	755	-	-	987	-	-	-	-	704	130	113	559
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	130	113	-
Stage 1	-	-	-	-	-	-	-	-	-	293	358	-
Stage 2	-	-	-	-	-	-	-	-	-	627	457	-

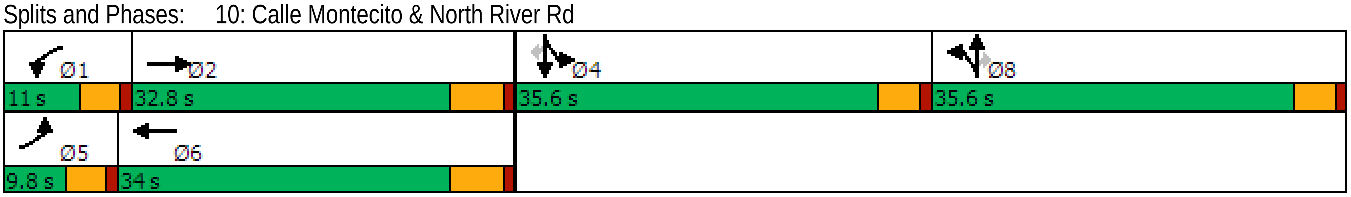
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	0	20.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	755	-	-	987	-	-	294
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.203
HCM Control Delay (s)	0	9.9	-	-	0	-	-	20.3
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.7

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	49	486	32	669	1	8	1	105
Future Volume (vph)	49	486	32	669	1	8	1	105
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.7	27.6	6.7	26.0	9.9	9.9	15.7	15.7
Actuated g/C Ratio	0.08	0.37	0.09	0.35	0.13	0.13	0.21	0.21
v/c Ratio	0.39	0.43	0.22	0.69	0.06	0.03	0.58	0.27
Control Delay	50.2	23.2	44.0	27.6	31.8	0.1	35.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	23.2	44.0	27.6	31.8	0.1	35.8	8.4
LOS	D	C	D	C	C	A	D	A
Approach Delay		25.6		28.3	18.8		26.3	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 75.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	486	27	32	669	98	11	1	8	196	1	105
Future Volume (veh/h)	49	486	27	32	669	98	11	1	8	196	1	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	528	29	35	727	107	12	1	9	213	1	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1100	60	67	957	141	182	15	175	309	1	276
Arrive On Green	0.05	0.32	0.32	0.04	0.31	0.31	0.11	0.11	0.11	0.17	0.17	0.17
Sat Flow, veh/h	1781	3426	188	1781	3108	457	1650	138	1585	1773	8	1585
Grp Volume(v), veh/h	53	273	284	35	415	419	13	0	9	214	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1788	1788	0	1585	1782	0	1585
Q Serve(g_s), s	1.6	6.7	6.7	1.0	11.5	11.5	0.4	0.0	0.3	6.1	0.0	3.5
Cycle Q Clear(g_c), s	1.6	6.7	6.7	1.0	11.5	11.5	0.4	0.0	0.3	6.1	0.0	3.5
Prop In Lane	1.00		0.10	1.00		0.26	0.92		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	570	590	67	547	551	197	0	175	310	0	276
V/C Ratio(X)	0.59	0.48	0.48	0.52	0.76	0.76	0.07	0.00	0.05	0.69	0.00	0.41
Avail Cap(c_a), veh/h	174	886	916	213	925	931	1020	0	904	1016	0	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	14.8	14.8	25.7	17.0	17.0	21.7	0.0	21.6	21.1	0.0	20.0
Incr Delay (d2), s/veh	5.9	0.6	0.6	6.1	2.2	2.2	0.1	0.0	0.1	2.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	2.6	0.5	4.4	4.5	0.1	0.0	0.1	2.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	15.4	15.4	31.8	19.2	19.2	21.8	0.0	21.8	23.8	0.0	21.0
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		610			869			22			328	
Approach Delay, s/veh		16.8			19.7			21.8			22.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	23.1		14.1	7.3	22.4		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0
Max Q Clear Time (g_c+I1), s	3.0	8.7		8.1	3.6	13.5		2.4
Green Ext Time (p_c), s	0.0	2.1		1.3	0.0	3.3		0.0

Intersection Summary			
HCM 6th Ctrl Delay			19.3
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	33	675	752	1	0	83	0	
Future Volume (vph)	33	675	752	1	0	83	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.4	23.7	20.2		12.8	11.6	11.6	
Actuated g/C Ratio	0.15	0.48	0.41		0.26	0.23	0.23	
v/c Ratio	0.14	0.44	0.61		0.00	0.27	0.23	
Control Delay	29.1	9.4	15.3		0.0	20.7	1.2	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	29.1	9.4	15.3		0.0	20.7	1.2	
LOS	C	A	B		A	C	A	
Approach Delay		10.3	15.3				9.5	
Approach LOS		B	B				A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 49.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 45.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	675	0	0	752	52	1	0	1	83	0	112
Future Volume (veh/h)	33	675	0	0	752	52	1	0	1	83	0	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	734	0	0	817	57	1	0	1	90	0	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	1855	0	5	1223	85	202	39	100	436	0	248
Arrive On Green	0.04	0.52	0.00	0.00	0.36	0.36	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1781	3647	0	1781	3370	235	389	250	639	1416	0	1585
Grp Volume(v), veh/h	36	734	0	0	431	443	2	0	0	90	0	122
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1828	1278	0	0	1416	0	1585
Q Serve(g_s), s	0.8	4.8	0.0	0.0	7.8	7.8	0.0	0.0	0.0	0.0	0.0	2.7
Cycle Q Clear(g_c), s	0.8	4.8	0.0	0.0	7.8	7.8	2.7	0.0	0.0	1.7	0.0	2.7
Prop In Lane	1.00		0.00	1.00		0.13	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	74	1855	0	5	645	663	341	0	0	436	0	248
V/C Ratio(X)	0.49	0.40	0.00	0.00	0.67	0.67	0.01	0.00	0.00	0.21	0.00	0.49
Avail Cap(c_a), veh/h	349	4373	0	256	2093	2154	1284	0	0	1346	0	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	5.5	0.0	0.0	10.3	10.3	13.6	0.0	0.0	14.3	0.0	14.7
Incr Delay (d2), s/veh	4.9	0.1	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.1	0.0	0.0	2.4	2.5	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	5.7	0.0	0.0	11.5	11.4	13.6	0.0	0.0	14.6	0.0	16.2
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		770			874			2			212	
Approach Delay, s/veh		6.5			11.4			13.6			15.5	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	26.7		11.6	6.1	20.6		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32
Max Q Clear Time (g_c+I1), s	0.0	6.8		4.7	2.8	9.8		4.7
Green Ext Time (p_c), s	0.0	3.9		0.8	0.0	4.1		0.0

Intersection Summary			
HCM 6th Ctrl Delay			9.8
HCM 6th LOS			A

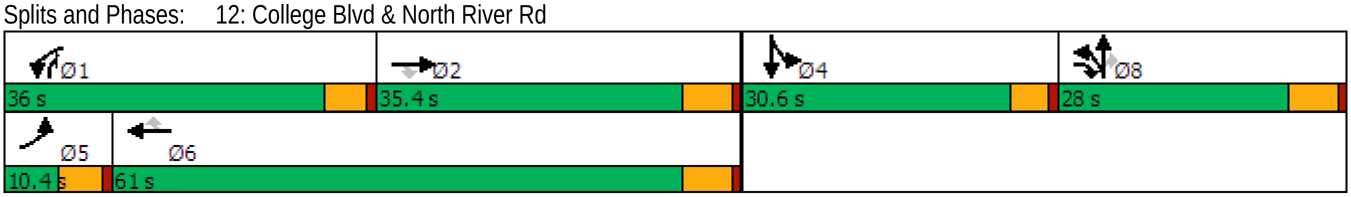
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	212	547	949	479	70	21	933	25	49
Future Volume (vph)	14	212	547	949	479	70	21	933	25	49
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	10.4	35.4	28.0	36.0	61.0	61.0	28.0	36.0	30.6	30.6
Total Split (%)	8.0%	27.2%	21.5%	27.7%	46.9%	46.9%	21.5%	27.7%	23.5%	23.5%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	14.0	38.2	31.7	49.3	49.3	22.8	60.4	10.6	10.6
Actuated g/C Ratio	0.05	0.14	0.39	0.32	0.50	0.50	0.23	0.61	0.11	0.11
v/c Ratio	0.15	0.46	0.70	0.93	0.29	0.09	0.86	0.48	0.14	0.31
Control Delay	55.0	42.4	9.7	49.6	16.8	2.0	59.5	1.9	42.7	42.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	42.4	9.7	49.6	16.8	2.0	59.5	1.9	42.7	42.1
LOS	D	D	A	D	B	A	E	A	D	D
Approach Delay		19.5			36.9		16.8			42.3
Approach LOS		B			D		B			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 98.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	212	547	949	479	70	304	21	933	25	49	9
Future Volume (veh/h)	14	212	547	949	479	70	304	21	933	25	49	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	230	595	1032	521	76	330	23	1014	27	53	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	959	749	974	1901	848	338	24	1351	92	79	15
Arrive On Green	0.02	0.27	0.27	0.28	0.53	0.53	0.20	0.20	0.20	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1670	116	2790	1781	1530	289
Grp Volume(v), veh/h	15	230	595	1032	521	76	353	0	1014	27	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1818
Q Serve(g_s), s	0.9	5.5	29.6	30.9	8.8	2.6	21.5	0.0	22.2	1.6	0.0	3.7
Cycle Q Clear(g_c), s	0.9	5.5	29.6	30.9	8.8	2.6	21.5	0.0	22.2	1.6	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	30	959	749	974	1901	848	362	0	1351	92	0	94
V/C Ratio(X)	0.50	0.24	0.79	1.06	0.27	0.09	0.98	0.00	0.75	0.29	0.00	0.67
Avail Cap(c_a), veh/h	86	959	749	974	1901	848	362	0	1351	422	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.5	31.2	23.1	39.4	13.9	12.5	43.5	0.0	22.9	50.1	0.0	51.1
Incr Delay (d2), s/veh	12.5	0.1	5.9	46.0	0.1	0.0	40.7	0.0	2.4	1.8	0.0	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.4	17.6	19.1	3.5	0.9	13.5	0.0	10.7	0.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	31.4	29.0	85.4	14.0	12.5	84.2	0.0	25.3	51.8	0.0	59.1
LnGrp LOS	E	C	C	F	B	B	F	A	C	D	A	E
Approach Vol, veh/h		840			1629			1367			90	
Approach Delay, s/veh		30.3			59.2			40.5			56.9	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	35.4		10.3	6.9	64.5		28.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	30.9	29.6		26.0	5.3	55.2		22.2				
Max Q Clear Time (g_c+I1), s	32.9	31.6		5.7	2.9	10.8		24.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			46.4
HCM 6th LOS			D

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	27	26	1207	1456	74
Future Volume (vph)	50	27	26	1207	1456	74
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.0	6.5	53.3	47.4	47.4
Actuated g/C Ratio	0.17	0.24	0.10	0.81	0.72	0.72
v/c Ratio	0.18	0.07	0.08	0.46	0.62	0.07
Control Delay	26.5	14.2	34.5	6.0	13.9	6.3
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	26.5	14.2	34.5	6.1	13.9	6.3
LOS	C	B	C	A	B	A
Approach Delay	22.2			6.7	13.5	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 65.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 55.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	27	26	1207	1456	74
Future Volume (veh/h)	50	27	26	1207	1456	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	29	28	1312	1583	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	189	229	132	2483	2008	895
Arrive On Green	0.11	0.11	0.04	0.70	0.56	0.56
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	54	29	28	1312	1583	80
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.5	0.9	0.4	9.4	18.6	1.2
Cycle Q Clear(g_c), s	1.5	0.9	0.4	9.4	18.6	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	189	229	132	2483	2008	895
V/C Ratio(X)	0.29	0.13	0.21	0.53	0.79	0.09
Avail Cap(c_a), veh/h	935	893	415	3439	2673	1192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	19.9	24.9	3.8	9.1	5.3
Incr Delay (d2), s/veh	0.8	0.2	0.8	0.2	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.2	1.7	5.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	20.1	25.7	4.0	10.3	5.4
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	83			1340	1663	
Approach Delay, s/veh	21.9			4.5	10.1	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		43.1		10.3	7.1	35.9
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		11.4		3.5	2.4	20.6
Green Ext Time (p_c), s		8.7		0.3	0.0	9.5

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	174	12	76	17	40	20	1010	16	1266	204
Future Volume (vph)	174	12	76	17	40	20	1010	16	1266	204
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	43.2	10.1	43.2	43.2
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	11.2%	48.0%	11.2%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.3	16.3		16.3	16.3	5.3	35.1	5.3	33.4	33.4
Actuated g/C Ratio	0.25	0.25		0.25	0.25	0.08	0.55	0.08	0.52	0.52
v/c Ratio	0.58	0.22		0.30	0.09	0.15	0.41	0.12	0.75	0.26
Control Delay	29.7	7.6		23.3	0.4	38.1	10.6	37.8	18.2	8.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	7.6		23.3	0.4	38.1	10.6	37.8	18.2	8.4
LOS	C	A		C	A	D	B	D	B	A
Approach Delay		21.7		16.5			11.1		17.1	
Approach LOS		C		B			B		B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 64.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	12	87	76	17	40	20	1010	29	16	1266	204
Future Volume (veh/h)	174	12	87	76	17	40	20	1010	29	16	1266	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	13	95	83	18	43	22	1098	32	17	1376	222
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	55	402	355	68	448	44	2395	70	36	1652	737
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.47	0.47	0.02	0.46	0.46
Sat Flow, veh/h	1341	194	1420	916	240	1585	1781	5099	149	1781	3554	1585
Grp Volume(v), veh/h	189	0	108	101	0	43	22	733	397	17	1376	222
Grp Sat Flow(s),veh/h/ln	1341	0	1615	1157	0	1585	1781	1702	1844	1781	1777	1585
Q Serve(g_s), s	9.2	0.0	3.5	3.6	0.0	1.4	0.8	10.0	10.0	0.6	23.2	6.0
Cycle Q Clear(g_c), s	16.3	0.0	3.5	7.1	0.0	1.4	0.8	10.0	10.0	0.6	23.2	6.0
Prop In Lane	1.00		0.88	0.82		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	345	0	457	423	0	448	44	1599	866	36	1652	737
V/C Ratio(X)	0.55	0.00	0.24	0.24	0.00	0.10	0.49	0.46	0.46	0.47	0.83	0.30
Avail Cap(c_a), veh/h	591	0	753	672	0	739	130	1855	1005	130	1937	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	18.9	21.0	0.0	18.1	33.0	12.3	12.3	33.3	16.0	11.4
Incr Delay (d2), s/veh	1.4	0.0	0.3	0.3	0.0	0.1	8.3	0.2	0.4	9.4	2.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.3	1.3	0.0	0.5	0.5	3.4	3.7	0.4	8.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	19.2	21.3	0.0	18.2	41.3	12.5	12.7	42.6	18.9	11.7
LnGrp LOS	C	A	B	C	A	B	D	B	B	D	B	B
Approach Vol, veh/h		297			144			1152			1615	
Approach Delay, s/veh		25.0			20.4			13.1			18.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	38.0		24.1	6.8	37.7		24.1				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	5.0	37.4		* 32	5.0	37.4		* 32				
Max Q Clear Time (g_c+I1), s	2.6	12.0		18.3	2.8	25.2		9.1				
Green Ext Time (p_c), s	0.0	5.7		1.0	0.0	6.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			17.1
HCM 6th LOS			B

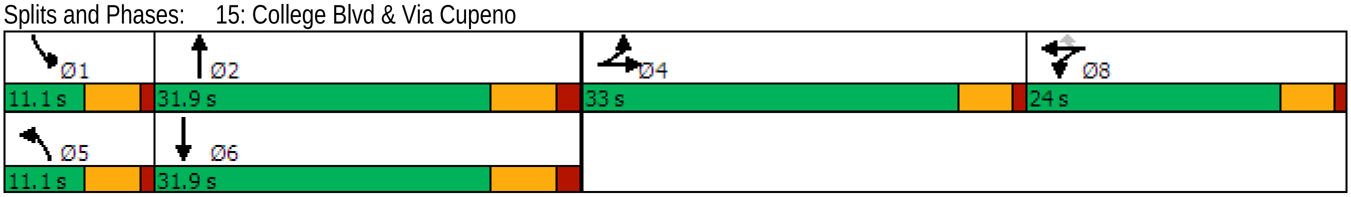
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1	5	1	132	1011	1	1362
Future Volume (vph)	1	5	1	132	1011	1	1362
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	11.1	31.9	11.1	31.9
Total Split (%)	33.0%	24.0%	24.0%	11.1%	31.9%	11.1%	31.9%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	11.7	11.7	6.2	35.9	6.2	26.0
Actuated g/C Ratio	0.15	0.16	0.16	0.08	0.48	0.08	0.35
v/c Ratio	0.17	0.54	0.00	0.50	0.47	0.01	0.87
Control Delay	19.1	38.6	0.0	43.5	18.1	39.0	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	38.6	0.0	43.5	18.1	39.0	31.8
LOS	B	D	A	D	B	D	C
Approach Delay	19.1	38.3			20.9		31.9
Approach LOS	B	D			C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 74.4	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1	35	133	5	1	132	1011	37	1	1362	52
Future Volume (veh/h)	47	1	35	133	5	1	132	1011	37	1	1362	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	1	38	145	5	1	143	1099	40	1	1480	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	4	155	191	7	176	300	2239	81	3	1803	69
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.09	0.44	0.44	0.00	0.36	0.36
Sat Flow, veh/h	1781	41	1550	1725	59	1585	3456	5057	184	1781	5045	194
Grp Volume(v), veh/h	51	0	39	150	0	1	143	740	399	1	999	538
Grp Sat Flow(s),veh/h/ln	1781	0	1591	1784	0	1585	1728	1702	1837	1781	1702	1835
Q Serve(g_s), s	1.7	0.0	1.4	5.2	0.0	0.0	2.5	9.8	9.8	0.0	16.9	16.9
Cycle Q Clear(g_c), s	1.7	0.0	1.4	5.2	0.0	0.0	2.5	9.8	9.8	0.0	16.9	16.9
Prop In Lane	1.00		0.97	0.97		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	178	0	159	198	0	176	300	1507	813	3	1217	656
V/C Ratio(X)	0.29	0.00	0.24	0.76	0.00	0.01	0.48	0.49	0.49	0.34	0.82	0.82
Avail Cap(c_a), veh/h	785	0	701	533	0	474	326	1507	813	168	1345	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	26.4	27.4	0.0	25.1	27.6	12.6	12.6	31.7	18.6	18.6
Incr Delay (d2), s/veh	0.9	0.0	0.8	5.9	0.0	0.0	1.2	0.2	0.5	57.1	3.9	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.6	2.4	0.0	0.0	1.0	3.3	3.7	0.1	6.6	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	27.2	33.3	0.0	25.1	28.8	12.9	13.1	88.7	22.4	25.5
LnGrp LOS	C	A	C	C	A	C	C	B	B	F	C	C
Approach Vol, veh/h		90			151			1282			1538	
Approach Delay, s/veh		27.3			33.2			14.7			23.5	
Approach LOS		C			C			B			C	

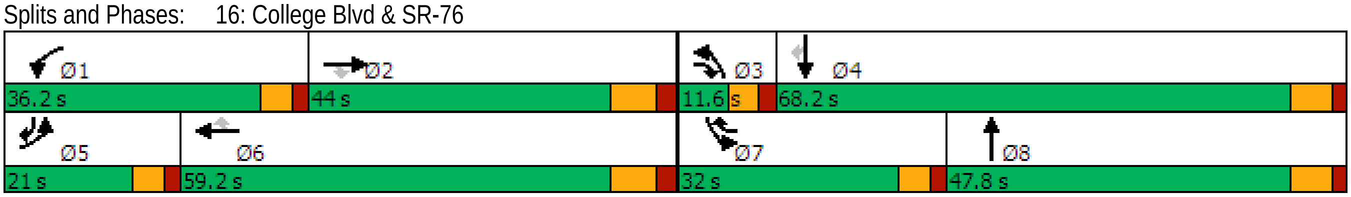
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	34.9		11.4	10.6	29.5		12.0				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	25.1		28.0	6.0	25.1		19.0				
Max Q Clear Time (g_c+I1), s	2.0	11.8		3.7	4.5	18.9		7.2				
Green Ext Time (p_c), s	0.0	4.6		0.3	0.1	3.8		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		20.4
HCM 6th LOS		C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	291	766	22	527	1370	448	48	447	492	708	325
Future Volume (vph)	291	766	22	527	1370	448	48	447	492	708	325
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.4	36.2	50.1	28.7	49.6	83.7	5.9	37.1	26.1	59.9	82.1
Actuated g/C Ratio	0.10	0.23	0.32	0.19	0.32	0.54	0.04	0.24	0.17	0.39	0.53
v/c Ratio	0.93	0.70	0.04	0.90	0.91	0.55	0.40	0.90	0.92	0.56	0.40
Control Delay	101.8	58.5	0.1	79.5	60.0	22.7	83.9	65.7	85.7	39.6	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	58.5	0.1	79.5	60.0	22.7	83.9	65.7	85.7	39.6	16.2
LOS	F	E	A	E	E	C	F	E	F	D	B
Approach Delay		69.0			57.2			66.9		49.5	
Approach LOS		E			E			E		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 154.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 58.7	Intersection LOS: E
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	766	22	527	1370	448	48	447	261	492	708	325
Future Volume (veh/h)	291	766	22	527	1370	448	48	447	261	492	708	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	316	833	24	573	1489	487	52	486	284	535	770	353
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	1217	417	628	1640	774	86	527	307	577	1371	768
Arrive On Green	0.10	0.24	0.24	0.18	0.32	0.32	0.02	0.24	0.24	0.17	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2163	1258	3456	3554	1585
Grp Volume(v), veh/h	316	833	24	573	1489	487	52	399	371	535	770	353
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1644	1728	1777	1585
Q Serve(g_s), s	14.0	23.0	1.8	25.2	43.3	35.1	2.3	33.9	34.1	23.6	26.3	22.9
Cycle Q Clear(g_c), s	14.0	23.0	1.8	25.2	43.3	35.1	2.3	33.9	34.1	23.6	26.3	22.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.77	1.00		1.00
Lane Grp Cap(c), veh/h	342	1217	417	628	1640	774	86	433	401	577	1371	768
V/C Ratio(X)	0.93	0.68	0.06	0.91	0.91	0.63	0.60	0.92	0.93	0.93	0.56	0.46
Avail Cap(c_a), veh/h	342	1217	417	681	1689	789	132	471	435	587	1410	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.2	53.7	42.7	62.1	50.3	29.3	74.7	57.1	57.2	63.6	37.3	26.5
Incr Delay (d2), s/veh	30.3	1.6	0.1	16.0	7.5	1.6	6.6	22.5	24.7	21.0	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	10.1	0.7	12.5	19.6	13.8	1.1	17.9	17.0	12.1	11.7	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.5	55.3	42.7	78.1	57.8	30.8	81.3	79.6	81.9	84.5	37.8	26.9
LnGrp LOS	F	E	D	E	E	C	F	E	F	F	D	C
Approach Vol, veh/h		1173			2549			822			1658	
Approach Delay, s/veh		66.9			57.2			80.7			50.5	
Approach LOS		E			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.8	44.9	9.6	66.5	21.0	57.7	31.5	44.5
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	27.2	25.0	4.3	28.3	16.0	45.3	25.6	36.1
Green Ext Time (p_c), s	0.9	3.3	0.0	6.3	0.0	4.5	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

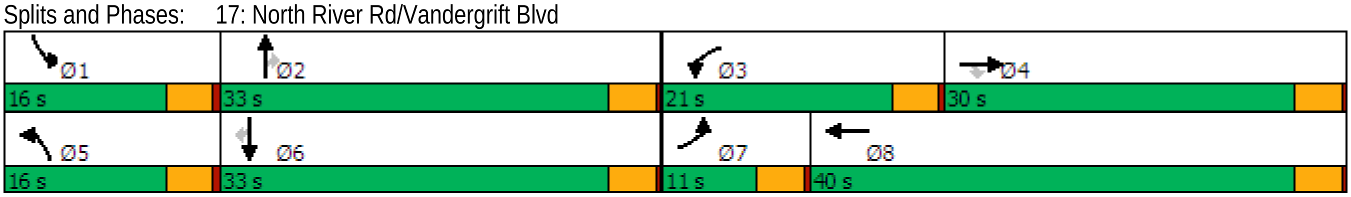
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	56	109	410	51	116	807	197	92	701	38
Future Volume (vph)	47	56	109	410	51	116	807	197	92	701	38
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	10.6	10.6	15.0	20.9	10.2	33.4	33.4	9.5	29.9	29.9
Actuated g/C Ratio	0.08	0.13	0.13	0.19	0.26	0.13	0.42	0.42	0.12	0.38	0.38
v/c Ratio	0.34	0.25	0.35	0.69	0.50	0.55	0.41	0.27	0.47	0.57	0.06
Control Delay	45.5	34.2	6.8	38.2	8.9	45.5	20.8	4.7	43.8	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	34.2	6.8	38.2	8.9	45.5	20.8	4.7	43.8	24.6	0.2
LOS	D	C	A	D	A	D	C	A	D	C	A
Approach Delay		22.7			26.2		20.5			25.6	
Approach LOS		C			C		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 79.4	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	56	109	410	51	233	116	807	197	92	701	38
Future Volume (veh/h)	47	56	109	410	51	233	116	807	197	92	701	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	61	118	446	55	253	126	877	214	100	762	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	213	181	569	68	313	162	2166	672	130	1444	644
Arrive On Green	0.04	0.11	0.11	0.16	0.23	0.23	0.09	0.42	0.42	0.07	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	3456	291	1338	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	51	61	118	446	0	308	126	877	214	100	762	41
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1629	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	2.0	2.1	5.1	8.8	0.0	12.7	4.9	8.5	6.4	3.9	11.6	1.1
Cycle Q Clear(g_c), s	2.0	2.1	5.1	8.8	0.0	12.7	4.9	8.5	6.4	3.9	11.6	1.1
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	213	181	569	0	381	162	2166	672	130	1444	644
V/C Ratio(X)	0.64	0.29	0.65	0.78	0.00	0.81	0.78	0.40	0.32	0.77	0.53	0.06
Avail Cap(c_a), veh/h	175	681	577	823	0	822	300	2166	672	300	1444	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	28.9	30.3	28.6	0.0	25.8	31.7	14.3	13.7	32.5	16.0	12.9
Incr Delay (d2), s/veh	8.4	0.7	3.9	3.1	0.0	4.1	7.9	0.6	1.2	9.2	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0	2.1	3.8	0.0	5.1	2.4	3.1	2.3	2.0	4.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	29.7	34.2	31.7	0.0	29.9	39.6	14.8	14.9	41.7	17.4	13.1
LnGrp LOS	D	C	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		230			754			1217			903	
Approach Delay, s/veh		34.7			31.0			17.4			19.9	
Approach LOS		C			C			B			B	

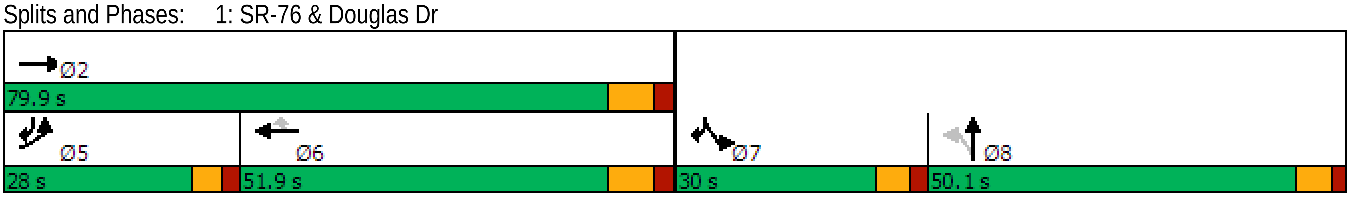
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	34.3	15.7	12.1	10.5	33.0	7.2	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	5.9	10.5	10.8	7.1	6.9	13.6	4.0	14.7
Green Ext Time (p_c), s	0.1	6.8	0.9	0.6	0.1	4.9	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	502	1617	1034	252	287	346	
Future Volume (vph)	502	1617	1034	252	287	346	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	79.9	51.9	51.9	30.0		50.1
Total Split (%)	17.5%	49.9%	32.4%	32.4%	18.8%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	71.9	43.9	43.9	23.9	52.3	
Actuated g/C Ratio	0.20	0.65	0.40	0.40	0.22	0.48	
v/c Ratio	0.78	0.76	0.80	0.34	0.81	0.25	
Control Delay	50.6	15.8	34.2	3.9	58.7	2.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.6	15.8	34.2	3.9	58.7	2.1	
LOS	D	B	C	A	E	A	
Approach Delay		24.1	28.2				
Approach LOS		C	C				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	1617	0	0	1034	252	0	0	0	287	0	346
Future Volume (veh/h)	502	1617	0	0	1034	252	0	0	0	287	0	346
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	546	1758	0	0	1124	274	0	0	0	312	0	376
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	663	2276	0	0	1366	609	0	2	0	357	0	0
Arrive On Green	0.19	0.64	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.20	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	312	
Grp Volume(v), veh/h	546	1758	0	0	1124	274	0	0	0	312	47.2	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	D	
Q Serve(g_s), s	13.4	31.2	0.0	0.0	25.2	11.4	0.0	0.0	0.0	15.0		
Cycle Q Clear(g_c), s	13.4	31.2	0.0	0.0	25.2	11.4	0.0	0.0	0.0	15.0		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	663	2276	0	0	1366	609	0	2	0	357		
V/C Ratio(X)	0.82	0.77	0.00	0.00	0.82	0.45	0.00	0.00	0.00	0.87		
Avail Cap(c_a), veh/h	870	2884	0	0	1761	785	0	929	0	481		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	34.4	11.3	0.0	0.0	24.6	20.3	0.0	0.0	0.0	34.3		
Incr Delay (d2), s/veh	5.0	1.0	0.0	0.0	2.6	0.5	0.0	0.0	0.0	12.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.0	10.7	0.0	0.0	10.6	4.1	0.0	0.0	0.0	7.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	12.4	0.0	0.0	27.1	20.8	0.0	0.0	0.0	47.2		
LnGrp LOS	D	B	A	A	C	C	A	A	A	D		
Approach Vol, veh/h		2304			1398			0				
Approach Delay, s/veh		18.8			25.9			0.0				
Approach LOS		B			C							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		64.7			22.7	42.1	23.8	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		71.9			* 22	43.9	23.9	44.0				
Max Q Clear Time (g_c+I1), s		33.2			15.4	27.2	17.0	0.0				
Green Ext Time (p_c), s		14.1			1.6	6.8	0.7	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			23.4
HCM 6th LOS			C

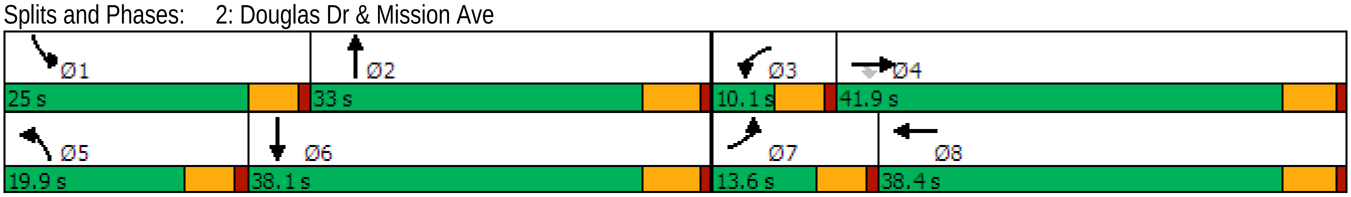
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	227	609	148	60	332	165	555	292	469
Future Volume (vph)	227	609	148	60	332	165	555	292	469
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.6	41.9	41.9	10.1	38.4	19.9	33.0	25.0	38.1
Total Split (%)	12.4%	38.1%	38.1%	9.2%	34.9%	18.1%	30.0%	22.7%	34.6%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	25.6	25.6	5.1	22.0	13.3	21.6	20.2	28.5
Actuated g/C Ratio	0.09	0.27	0.27	0.05	0.23	0.14	0.23	0.21	0.30
v/c Ratio	0.79	0.69	0.30	0.68	0.79	0.72	0.77	0.84	0.53
Control Delay	62.8	34.9	7.0	82.4	28.5	57.6	41.6	58.3	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	34.9	7.0	82.4	28.5	57.6	41.6	58.3	30.0
LOS	E	C	A	F	C	E	D	E	C
Approach Delay		37.1			32.8		45.2		40.2
Approach LOS		D			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 94.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	609	148	60	332	361	165	555	23	292	469	46
Future Volume (veh/h)	227	609	148	60	332	361	165	555	23	292	469	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	662	161	65	361	392	179	603	25	317	510	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	1152	514	83	500	446	216	720	30	351	925	90
Arrive On Green	0.09	0.32	0.32	0.05	0.28	0.28	0.12	0.21	0.21	0.20	0.28	0.28
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3477	144	1781	3270	320
Grp Volume(v), veh/h	247	662	161	65	361	392	179	308	320	317	276	284
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1844	1781	1777	1813
Q Serve(g_s), s	6.7	14.7	7.3	3.4	17.4	22.5	9.3	15.8	15.8	16.5	12.6	12.7
Cycle Q Clear(g_c), s	6.7	14.7	7.3	3.4	17.4	22.5	9.3	15.8	15.8	16.5	12.6	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	309	1152	514	83	500	446	216	368	382	351	503	513
V/C Ratio(X)	0.80	0.57	0.31	0.78	0.72	0.88	0.83	0.84	0.84	0.90	0.55	0.55
Avail Cap(c_a), veh/h	309	1363	608	94	616	550	277	508	527	373	603	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	26.7	24.2	44.9	30.8	32.6	40.8	36.2	36.2	37.3	29.0	29.0
Incr Delay (d2), s/veh	13.9	0.5	0.3	30.3	3.2	12.9	15.0	8.6	8.4	23.8	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.2	2.7	2.2	7.7	10.0	4.9	7.6	7.9	9.4	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	27.2	24.5	75.1	34.0	45.5	55.9	44.7	44.6	61.2	29.9	29.9
LnGrp LOS	E	C	C	E	C	D	E	D	D	E	C	C
Approach Vol, veh/h		1070			818			807			877	
Approach Delay, s/veh		33.5			42.8			47.1			41.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	25.5	9.6	36.2	16.6	32.7	13.6	32.2
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	19.9	27.2	5.0	36.5	14.8	32.3	8.5	33.0
Max Q Clear Time (g_c+I1), s	18.5	17.8	5.4	16.7	11.3	14.7	8.7	24.5
Green Ext Time (p_c), s	0.2	1.9	0.0	3.9	0.2	2.1	0.0	2.3

Intersection Summary			
HCM 6th Ctrl Delay			40.6
HCM 6th LOS			D

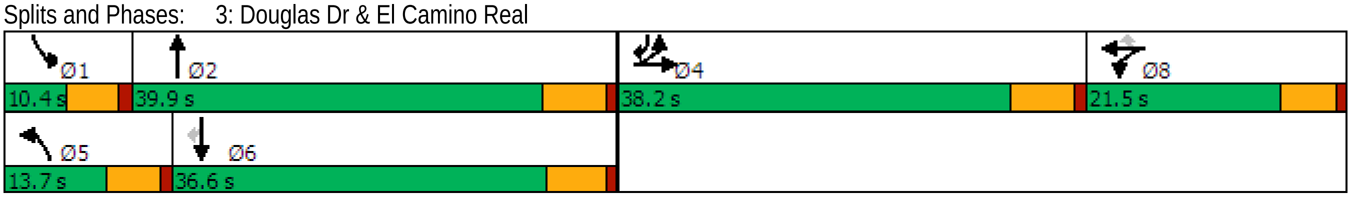
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	979	63	55	25	10	79	955	7	675	604
Future Volume (vph)	979	63	55	25	10	79	955	7	675	604
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	38.2	38.2		21.5	21.5	13.7	39.9	10.4	36.6	38.2
Total Split (%)	34.7%	34.7%		19.5%	19.5%	12.5%	36.3%	9.5%	33.3%	34.7%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	32.4	32.4	97.3	10.0	10.0	8.0	37.8	5.1	29.4	69.4
Actuated g/C Ratio	0.33	0.33	1.00	0.10	0.10	0.08	0.39	0.05	0.30	0.71
v/c Ratio	0.93	0.11	0.04	0.46	0.04	0.60	0.81	0.09	0.69	0.33
Control Delay	48.2	26.7	0.0	51.3	0.2	64.0	33.8	50.6	36.1	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	26.7	0.0	51.3	0.2	64.0	33.8	50.6	36.1	8.2
LOS	D	C	A	D	A	E	C	D	D	A
Approach Delay		44.6		45.4			36.0		23.1	
Approach LOS		D		D			D		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 97.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 82.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	979	63	55	53	25	10	79	955	63	7	675	604
Future Volume (veh/h)	979	63	55	53	25	10	79	955	63	7	675	604
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1064	68	0	58	27	11	86	1038	68	8	734	657
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1157	626		79	37	101	110	1146	75	18	1019	1734
Arrive On Green	0.33	0.33	0.00	0.06	0.06	0.06	0.06	0.34	0.34	0.01	0.29	0.29
Sat Flow, veh/h	3456	1870	1585	1234	575	1585	1781	3386	222	1781	3554	2790
Grp Volume(v), veh/h	1064	68	0	85	0	11	86	545	561	8	734	657
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1830	1781	1777	1395
Q Serve(g_s), s	27.3	2.3	0.0	4.3	0.0	0.6	4.4	26.9	27.0	0.4	17.1	10.7
Cycle Q Clear(g_c), s	27.3	2.3	0.0	4.3	0.0	0.6	4.4	26.9	27.0	0.4	17.1	10.7
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	1157	626		115	0	101	110	602	620	18	1019	1734
V/C Ratio(X)	0.92	0.11		0.74	0.00	0.11	0.78	0.91	0.91	0.45	0.72	0.38
Avail Cap(c_a), veh/h	1200	649		314	0	275	160	650	669	97	1180	1860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	21.2	0.0	42.4	0.0	40.7	42.6	29.1	29.1	45.4	29.5	8.6
Incr Delay (d2), s/veh	11.2	0.1	0.0	8.8	0.0	0.5	13.8	15.6	15.3	16.5	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	1.0	0.0	2.2	0.0	0.2	2.3	13.6	14.0	0.3	7.4	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	21.2	0.0	51.1	0.0	41.1	56.4	44.7	44.4	61.8	31.4	8.8
LnGrp LOS	D	C		D	A	D	E	D	D	E	C	A
Approach Vol, veh/h		1132	A		96			1192			1399	
Approach Delay, s/veh		39.5			50.0			45.4			20.9	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	37.4		37.0	11.1	32.6		11.4				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	33.7		32.0	8.3	* 31		16.0				
Max Q Clear Time (g_c+I1), s	2.4	29.0		29.3	6.4	19.1		6.3				
Green Ext Time (p_c), s	0.0	2.3		1.6	0.0	5.6		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

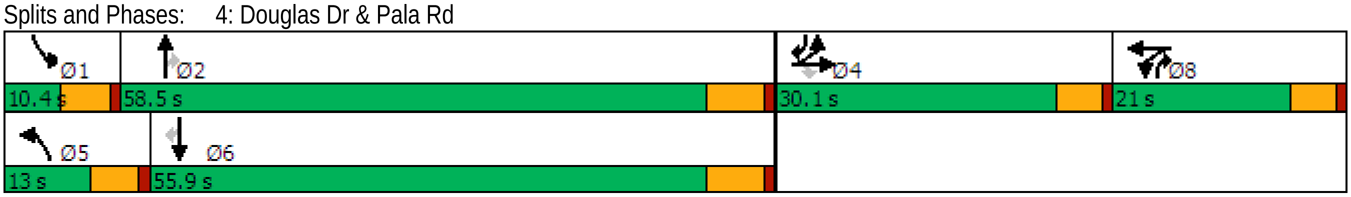
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	1	89	7	3	90	1749	17	21	1189	100
Future Volume (vph)	94	1	89	7	3	90	1749	17	21	1189	100
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	13.0	58.5	21.0	10.4	55.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.8%	48.8%	17.5%	8.7%	46.6%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.5	10.5	10.5	6.6	6.6	7.9	54.3	60.2	5.2	44.3	61.2
Actuated g/C Ratio	0.12	0.12	0.12	0.08	0.08	0.09	0.63	0.70	0.06	0.51	0.71
v/c Ratio	0.27	0.24	0.32	0.06	0.20	0.61	0.86	0.02	0.22	0.71	0.09
Control Delay	39.6	39.1	6.4	45.6	22.9	60.1	22.4	0.0	51.0	20.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	39.1	6.4	45.6	22.9	60.1	22.4	0.0	51.0	20.9	1.1
LOS	D	D	A	D	C	E	C	A	D	C	A
Approach Delay		23.4			27.8		24.0			19.8	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	89	7	3	24	90	1749	17	21	1189	100
Future Volume (veh/h)	94	1	89	7	3	24	90	1749	17	21	1189	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	0	97	8	3	26	98	1901	18	23	1292	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	0	144	73	7	60	125	2079	993	44	1917	999
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.07	0.59	0.59	0.02	0.54	0.54
Sat Flow, veh/h	3563	0	1585	1781	167	1444	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	103	0	97	8	0	29	98	1901	18	23	1292	109
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1610	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.3	0.0	5.0	0.4	0.0	1.5	4.6	40.3	0.4	1.1	22.2	2.3
Cycle Q Clear(g_c), s	2.3	0.0	5.0	0.4	0.0	1.5	4.6	40.3	0.4	1.1	22.2	2.3
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	0	144	73	0	66	125	2079	993	44	1917	999
V/C Ratio(X)	0.32	0.00	0.67	0.11	0.00	0.44	0.78	0.91	0.02	0.52	0.67	0.11
Avail Cap(c_a), veh/h	1054	0	469	335	0	303	160	2199	1046	105	2090	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	37.2	39.0	0.0	39.6	38.7	15.6	6.0	40.7	14.1	6.2
Incr Delay (d2), s/veh	0.6	0.0	5.3	0.6	0.0	4.5	17.3	6.2	0.0	9.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.1	0.2	0.0	0.7	2.6	15.8	0.1	0.6	8.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	0.0	42.5	39.7	0.0	44.0	55.9	21.9	6.0	50.0	14.8	6.2
LnGrp LOS	D	A	D	D	A	D	E	C	A	D	B	A
Approach Vol, veh/h		200			37			2017			1424	
Approach Delay, s/veh		39.4			43.1			23.4			14.8	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	55.7		12.8	11.3	51.8		8.6
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.0	52.3		25.0	7.6	49.7		15.9
Max Q Clear Time (g_c+I1), s	3.1	42.3		7.0	6.6	24.2		3.5
Green Ext Time (p_c), s	0.0	7.1		0.8	0.0	8.4		0.1

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C

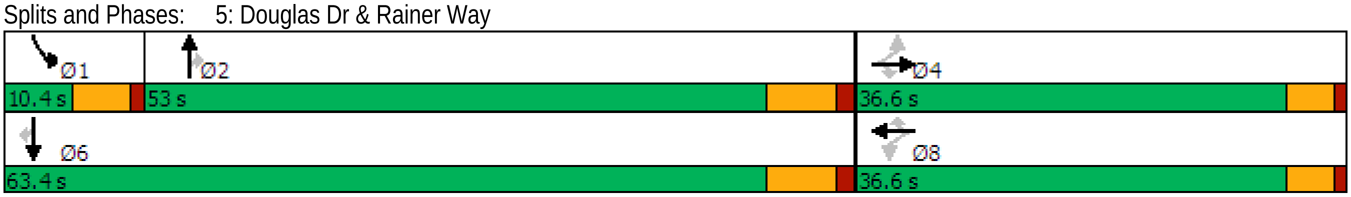
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	2	73	41	2	4	1683	80	4	1135	73
Future Volume (vph)	8	2	73	41	2	4	1683	80	4	1135	73
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		11.1	11.1		11.1	11.1	56.0	56.0	5.1	57.6	57.6
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.73	0.73	0.07	0.75	0.75
v/c Ratio		0.05	0.25		0.24	0.01	0.71	0.07	0.03	0.46	0.07
Control Delay		25.3	5.8		29.7	0.0	13.2	3.5	38.2	7.0	4.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.3	5.8		29.7	0.0	13.2	3.5	38.2	7.0	4.3
LOS		C	A		C	A	B	A	D	A	A
Approach Delay		8.2			27.4		12.7			6.9	
Approach LOS		A			C		B			A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	41	2	4	0	1683	80	4	1135	73
Future Volume (veh/h)	8	2	73	41	2	4	0	1683	80	4	1135	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	2	79	45	2	4	0	1829	87	4	1234	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	91	12	363	106	3	363	0	1974	880	9	2234	996
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.00	0.56	0.56	0.01	0.63	0.63
Sat Flow, veh/h	39	54	1585	74	12	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	11	0	79	47	0	4	0	1829	87	4	1234	79
Grp Sat Flow(s),veh/h/ln	93	0	1585	87	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	0.0	3.2	1.1	0.0	0.2	0.0	37.5	2.1	0.2	15.7	1.5
Cycle Q Clear(g_c), s	17.8	0.0	3.2	18.2	0.0	0.2	0.0	37.5	2.1	0.2	15.7	1.5
Prop In Lane	0.82		1.00	0.96		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	0	363	109	0	363	0	1974	880	9	2234	996
V/C Ratio(X)	0.11	0.00	0.22	0.43	0.00	0.01	0.00	0.93	0.10	0.43	0.55	0.08
Avail Cap(c_a), veh/h	360	0	638	340	0	638	0	2070	923	112	2535	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	24.8	38.7	0.0	23.7	0.0	16.2	8.3	39.4	8.4	5.8
Incr Delay (d2), s/veh	0.4	0.0	0.3	2.7	0.0	0.0	0.0	7.6	0.0	28.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.0	0.0	0.1	0.0	15.2	0.6	0.2	5.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	25.1	41.4	0.0	23.7	0.0	23.8	8.4	68.0	8.6	5.8
LnGrp LOS	C	A	C	D	A	C	A	C	A	E	A	A
Approach Vol, veh/h		90			51			1916			1317	
Approach Delay, s/veh		25.3			40.0			23.1			8.6	
Approach LOS		C			D			C			A	

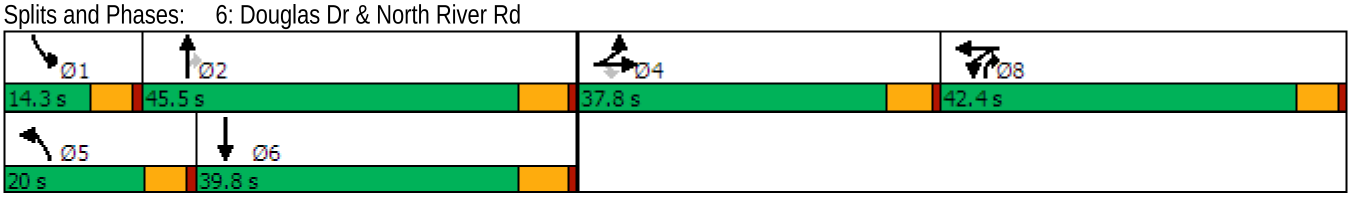
Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	5.8	51.1		23.4		56.9		23.4
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0
Max Q Clear Time (g_c+I1), s	2.2	39.5		19.8		17.7		20.2
Green Ext Time (p_c), s	0.0	5.2		0.2		8.4		0.1

Intersection Summary			
HCM 6th Ctrl Delay			17.8
HCM 6th LOS			B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	38	94	67	520	64	146	667	783	39	571
Future Volume (vph)	38	94	67	520	64	146	667	783	39	571
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.0	45.5	42.4	14.3	39.8
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.3%	32.5%	30.3%	10.2%	28.4%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.0	13.0	13.0	31.4	31.4	14.1	38.2	71.9	7.7	28.9
Actuated g/C Ratio	0.12	0.12	0.12	0.28	0.28	0.13	0.34	0.65	0.07	0.26
v/c Ratio	0.20	0.25	0.23	0.62	0.43	0.71	0.59	0.40	0.34	0.73
Control Delay	48.7	47.6	1.7	43.3	34.8	67.8	35.5	1.1	63.3	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	47.6	1.7	43.3	34.8	67.8	35.5	1.1	63.3	44.2
LOS	D	D	A	D	C	E	D	A	E	D
Approach Delay		32.3			38.3		21.6			45.3
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 110.9	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	94	67	520	64	40	146	667	783	39	571	46
Future Volume (veh/h)	38	94	67	520	64	40	146	667	783	39	571	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	102	73	565	70	43	159	725	851	42	621	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	329	147	805	245	150	197	1349	1689	66	1019	82
Arrive On Green	0.09	0.09	0.09	0.23	0.23	0.23	0.11	0.38	0.38	0.04	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	3563	1084	666	1781	3554	2790	1781	3331	268
Grp Volume(v), veh/h	41	102	73	565	0	113	159	725	851	42	331	340
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1750	1781	1777	1395	1781	1777	1822
Q Serve(g_s), s	1.8	2.3	3.8	12.5	0.0	4.6	7.5	13.7	14.9	2.0	13.7	13.7
Cycle Q Clear(g_c), s	1.8	2.3	3.8	12.5	0.0	4.6	7.5	13.7	14.9	2.0	13.7	13.7
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	165	329	147	805	0	395	197	1349	1689	66	543	557
V/C Ratio(X)	0.25	0.31	0.50	0.70	0.00	0.29	0.81	0.54	0.50	0.64	0.61	0.61
Avail Cap(c_a), veh/h	663	1323	590	1533	0	753	303	1625	1905	184	695	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	36.4	37.1	30.6	0.0	27.5	37.3	20.8	9.6	40.8	25.4	25.5
Incr Delay (d2), s/veh	1.1	0.8	3.7	1.6	0.0	0.6	8.9	0.7	0.5	9.9	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	1.6	5.4	0.0	1.9	3.7	5.6	7.4	1.0	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	37.2	40.8	32.2	0.0	28.1	46.2	21.5	10.1	50.8	27.8	27.8
LnGrp LOS	D	D	D	C	A	C	D	C	B	D	C	C
Approach Vol, veh/h		216			678			1735			713	
Approach Delay, s/veh		38.4			31.5			18.2			29.1	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	38.8		13.8	14.9	32.5		24.8
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	8.9	39.3		32.0	14.6	33.6		37.0
Max Q Clear Time (g_c+I1), s	4.0	16.9		5.8	9.5	15.7		14.5
Green Ext Time (p_c), s	0.0	15.7		1.3	0.2	5.5		4.9

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

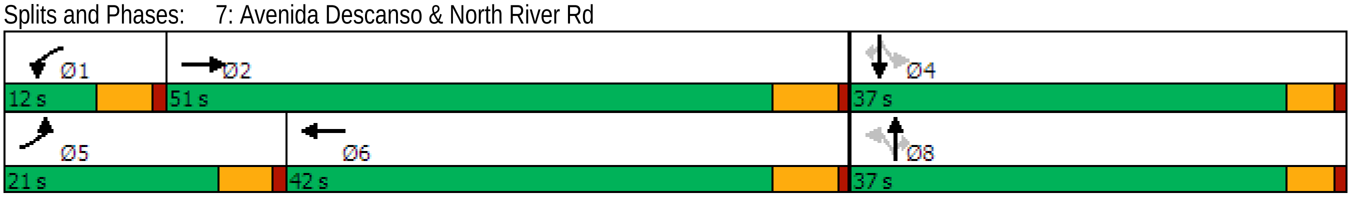
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	795	25	565	2	4	34	81	4	71
Future Volume (vph)	113	795	25	565	2	4	34	81	4	71
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	51.0	12.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	51.0%	12.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.4	26.6	7.1	18.5		12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.19	0.49	0.13	0.34		0.22	0.22		0.22	0.22
v/c Ratio	0.36	0.51	0.12	0.59		0.02	0.08		0.31	0.17
Control Delay	28.1	12.7	31.6	19.0		19.7	0.4		23.2	1.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	28.1	12.7	31.6	19.0		19.7	0.4		23.2	1.1
LOS	C	B	C	B		B	A		C	A
Approach Delay		14.6		19.5		3.0			13.1	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 54.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 50.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	795	12	25	565	85	2	4	34	81	4	71
Future Volume (veh/h)	113	795	12	25	565	85	2	4	34	81	4	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	864	13	27	614	92	2	4	37	88	4	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1346	20	58	963	144	180	241	262	408	14	262
Arrive On Green	0.10	0.38	0.38	0.03	0.31	0.31	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3584	54	1781	3100	464	290	1458	1585	1301	87	1585
Grp Volume(v), veh/h	123	428	449	27	351	355	6	0	37	92	0	77
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1787	1748	0	1585	1388	0	1585
Q Serve(g_s), s	2.4	7.2	7.2	0.5	6.2	6.2	0.0	0.0	0.7	2.0	0.0	1.5
Cycle Q Clear(g_c), s	2.4	7.2	7.2	0.5	6.2	6.2	0.1	0.0	0.7	2.1	0.0	1.5
Prop In Lane	1.00		0.03	1.00		0.26	0.33		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	174	668	699	58	552	555	421	0	262	423	0	262
V/C Ratio(X)	0.71	0.64	0.64	0.46	0.64	0.64	0.01	0.00	0.14	0.22	0.00	0.29
Avail Cap(c_a), veh/h	779	2210	2314	338	1770	1780	1612	0	1413	1427	0	1413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.9	9.3	9.3	17.3	10.8	10.8	12.7	0.0	13.0	13.6	0.0	13.3
Incr Delay (d2), s/veh	5.2	1.0	1.0	5.6	1.2	1.2	0.0	0.0	0.2	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.1	2.2	0.3	2.0	2.0	0.0	0.0	0.2	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	10.4	10.3	22.8	12.0	12.0	12.7	0.0	13.2	13.8	0.0	13.9
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1000			733			43			169	
Approach Delay, s/veh		11.7			12.4			13.1			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	19.5		10.6	8.7	17.1		10.6
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	6.9	45.2		32.4	15.9	36.2		32.4
Max Q Clear Time (g_c+I1), s	2.5	9.2		4.1	4.4	8.2		2.7
Green Ext Time (p_c), s	0.0	4.1		0.7	0.3	3.1		0.1

Intersection Summary			
HCM 6th Ctrl Delay			12.2
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	902	656	15	3	13
Future Vol, veh/h	21	902	656	15	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	980	713	16	3	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	729	0	-	0	1257	365
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	871	-	-	-	163	632
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	871	-	-	-	159	632
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	871	-	-	-	406
HCM Lane V/C Ratio	0.026	-	-	-	0.043
HCM Control Delay (s)	9.2	-	-	-	14.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	873	0	0	660	12	0	0	0	19	0	8
Future Vol, veh/h	25	873	0	0	660	12	0	0	0	19	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	949	0	0	717	13	0	0	0	21	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	730	0	0	949	0	0	-	-	475	1253	1727	365
Stage 1	-	-	-	-	-	-	-	-	-	724	724	-
Stage 2	-	-	-	-	-	-	-	-	-	529	1003	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	870	-	-	719	-	-	0	0	536	129	88	632
Stage 1	-	-	-	-	-	-	0	0	-	383	429	-
Stage 2	-	-	-	-	-	-	0	0	-	501	318	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	870	-	-	719	-	-	-	-	536	126	85	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	126	85	-
Stage 1	-	-	-	-	-	-	-	-	-	371	429	-
Stage 2	-	-	-	-	-	-	-	-	-	485	308	-

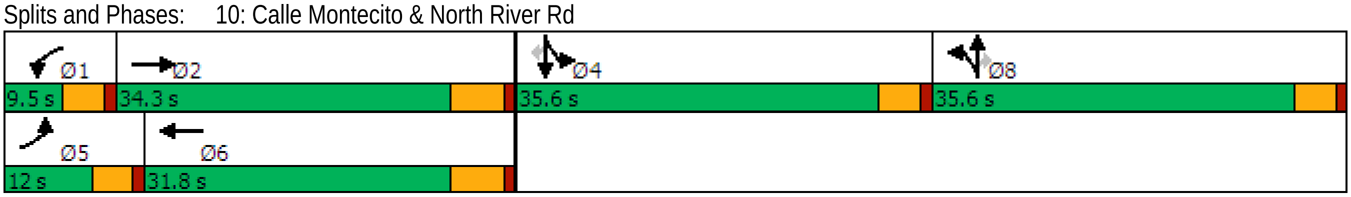
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	31.5
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	870	-	-	719	-	-	165
HCM Lane V/C Ratio	-	0.031	-	-	-	-	-	0.178
HCM Control Delay (s)	0	9.3	-	-	0	-	-	31.5
HCM Lane LOS	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.6

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	126	721	8	584	2	32	1	59
Future Volume (vph)	126	721	8	584	2	32	1	59
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.4	5.2	27.2	10.0	10.0	13.5	13.5
Actuated g/C Ratio	0.10	0.49	0.07	0.35	0.13	0.13	0.17	0.17
v/c Ratio	0.78	0.46	0.08	0.69	0.12	0.12	0.49	0.18
Control Delay	67.9	19.4	44.1	27.9	31.8	0.8	35.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	19.4	44.1	27.9	31.8	0.8	35.6	1.9
LOS	E	B	D	C	C	A	D	A
Approach Delay		26.5		28.1	14.3		25.4	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 78.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	721	10	8	584	183	23	2	32	135	1	59
Future Volume (veh/h)	126	721	10	8	584	183	23	2	32	135	1	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	784	11	9	635	199	25	2	35	147	1	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1420	20	21	822	257	181	14	173	230	2	206
Arrive On Green	0.10	0.40	0.40	0.01	0.31	0.31	0.11	0.11	0.11	0.13	0.13	0.13
Sat Flow, veh/h	1781	3588	50	1781	2663	834	1655	132	1585	1770	12	1585
Grp Volume(v), veh/h	137	388	407	9	423	411	27	0	35	148	0	64
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1720	1788	0	1585	1782	0	1585
Q Serve(g_s), s	4.1	9.3	9.3	0.3	11.9	11.9	0.8	0.0	1.1	4.3	0.0	2.0
Cycle Q Clear(g_c), s	4.1	9.3	9.3	0.3	11.9	11.9	0.8	0.0	1.1	4.3	0.0	2.0
Prop In Lane	1.00		0.03	1.00		0.48	0.93		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	176	703	736	21	549	531	195	0	173	232	0	206
V/C Ratio(X)	0.78	0.55	0.55	0.43	0.77	0.77	0.14	0.00	0.20	0.64	0.00	0.31
Avail Cap(c_a), veh/h	243	925	969	162	844	818	1009	0	895	1006	0	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	12.8	12.8	27.0	17.2	17.2	22.1	0.0	22.3	22.7	0.0	21.7
Incr Delay (d2), s/veh	10.4	0.7	0.6	13.5	2.4	2.5	0.3	0.0	0.6	2.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.3	3.4	0.2	4.6	4.5	0.3	0.0	0.4	1.9	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	13.5	13.5	40.5	19.6	19.7	22.4	0.0	22.8	25.6	0.0	22.5
LnGrp LOS	C	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		932			843			62			212	
Approach Delay, s/veh		16.6			19.9			22.7			24.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	27.4		11.7	9.9	22.7		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0				
Max Q Clear Time (g_c+I1), s	2.3	11.3		6.3	6.1	13.9		3.1				
Green Ext Time (p_c), s	0.0	3.2		0.8	0.1	3.1		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			19.0
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	103	796	710	49	0		
Future Volume (vph)	103	796	710	49	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	19.0	54.9	45.4	35.6	35.6	9.5	35.6
Total Split (%)	19.0%	54.9%	45.4%	35.6%	35.6%	10%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	10.0	32.9	21.7	10.8	10.8		
Actuated g/C Ratio	0.17	0.57	0.38	0.19	0.19		
v/c Ratio	0.36	0.43	0.64	0.20	0.16		
Control Delay	30.6	8.0	18.9	24.6	0.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	30.6	8.0	18.9	24.6	0.7		
LOS	C	A	B	C	A		
Approach Delay		10.6	18.9		9.8		
Approach LOS		B	B		A		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 57.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 46.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	796	0	0	710	62	0	0	0	49	0	79
Future Volume (veh/h)	103	796	0	0	710	62	0	0	0	49	0	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	865	0	0	772	67	0	0	0	53	0	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1936	0	4	1139	99	0	279	0	445	0	237
Arrive On Green	0.09	0.54	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3308	287	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	112	865	0	0	415	424	0	0	0	53	0	86
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1819	0	1870	0	1781	0	1585
Q Serve(g_s), s	2.5	5.9	0.0	0.0	8.0	8.0	0.0	0.0	0.0	1.0	0.0	2.0
Cycle Q Clear(g_c), s	2.5	5.9	0.0	0.0	8.0	8.0	0.0	0.0	0.0	1.0	0.0	2.0
Prop In Lane	1.00		0.00	1.00		0.16	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1936	0	4	611	626	0	279	0	445	0	237
V/C Ratio(X)	0.71	0.45	0.00	0.00	0.68	0.68	0.00	0.00	0.00	0.12	0.00	0.36
Avail Cap(c_a), veh/h	642	4260	0	222	1710	1751	0	1442	0	1508	0	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	5.5	0.0	0.0	11.3	11.3	0.0	0.0	0.0	15.0	0.0	15.4
Incr Delay (d2), s/veh	5.7	0.2	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.0	0.0	2.6	2.7	0.0	0.0	0.0	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	5.7	0.0	0.0	12.6	12.6	0.0	0.0	0.0	15.1	0.0	16.3
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		977			839			0			139	
Approach Delay, s/veh		7.7			12.6			0.0			15.9	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	28.6		11.6	8.1	20.5		11.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	5.0	48.2		30.0	14.5	38.7		* 31				
Max Q Clear Time (g_c+I1), s	0.0	7.9		4.0	4.5	10.0		0.0				
Green Ext Time (p_c), s	0.0	4.8		0.5	0.2	3.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		10.4
HCM 6th LOS		B

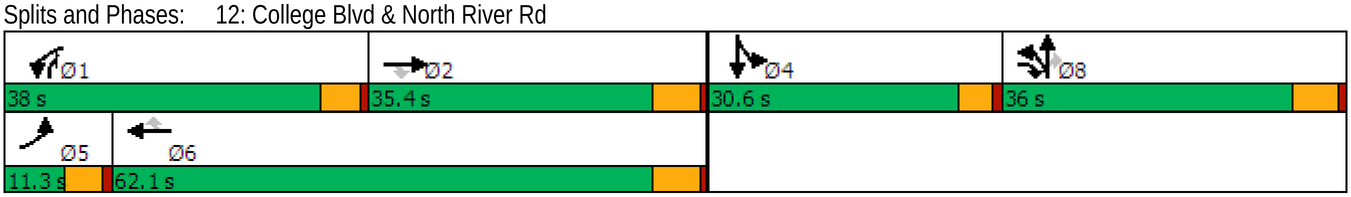
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	23	392	445	955	364	58	30	987	23	39
Future Volume (vph)	23	392	445	955	364	58	30	987	23	39
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.3	35.4	36.0	38.0	62.1	62.1	36.0	38.0	30.6	30.6
Total Split (%)	8.1%	25.3%	25.7%	27.1%	44.4%	44.4%	25.7%	27.1%	21.9%	21.9%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	19.1	51.2	33.5	51.4	51.4	30.7	70.1	10.5	10.5
Actuated g/C Ratio	0.05	0.17	0.45	0.30	0.46	0.46	0.27	0.62	0.09	0.09
v/c Ratio	0.26	0.71	0.52	1.02	0.25	0.08	0.95	0.53	0.15	0.25
Control Delay	64.0	52.2	4.7	74.0	21.7	1.7	72.8	4.3	50.3	50.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	52.2	4.7	74.0	21.7	1.7	72.8	4.3	50.3	50.5
LOS	E	D	A	E	C	A	E	A	D	D
Approach Delay		27.9			57.1		24.9			50.4
Approach LOS		C			E		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 112.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	392	445	955	364	58	393	30	987	23	39	2
Future Volume (veh/h)	23	392	445	955	364	58	393	30	987	23	39	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	426	484	1038	396	63	427	33	1073	25	42	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	865	789	958	1766	788	422	33	1483	81	80	4
Arrive On Green	0.02	0.24	0.24	0.28	0.50	0.50	0.25	0.25	0.25	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1659	128	2790	1781	1771	84
Grp Volume(v), veh/h	25	426	484	1038	396	63	460	0	1073	25	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1855
Q Serve(g_s), s	1.6	12.2	26.2	32.9	7.5	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Cycle Q Clear(g_c), s	1.6	12.2	26.2	32.9	7.5	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	42	865	789	958	1766	788	455	0	1483	81	0	84
V/C Ratio(X)	0.59	0.49	0.61	1.08	0.22	0.08	1.01	0.00	0.72	0.31	0.00	0.52
Avail Cap(c_a), veh/h	93	886	799	958	1766	788	455	0	1483	390	0	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	38.6	21.5	42.9	16.9	15.6	44.2	0.0	21.1	54.8	0.0	55.4
Incr Delay (d2), s/veh	12.6	0.4	1.4	54.4	0.1	0.0	45.1	0.0	1.8	2.1	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.4	14.8	21.1	3.1	0.9	18.9	0.0	11.3	0.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	39.0	22.9	97.3	17.0	15.7	89.3	0.0	22.9	57.0	0.0	60.3
LnGrp LOS	E	D	C	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		935			1497			1533			69	
Approach Delay, s/veh		31.5			72.6			42.8			59.1	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.0	34.7		10.0	7.9	64.8		36.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8
Max Green Setting (Gmax), s	32.9	29.6		26.0	6.2	56.3		30.2
Max Q Clear Time (g_c+I1), s	34.9	28.2		4.8	3.6	9.5		32.2
Green Ext Time (p_c), s	0.0	0.7		0.2	0.0	2.1		0.0

Intersection Summary			
HCM 6th Ctrl Delay			51.5
HCM 6th LOS			D

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	79	95	1425	1310	55
Future Volume (vph)	28	79	95	1425	1310	55
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	13.3	7.2	51.6	39.0	39.0
Actuated g/C Ratio	0.19	0.22	0.12	0.87	0.66	0.66
v/c Ratio	0.09	0.23	0.25	0.50	0.61	0.06
Control Delay	25.6	16.4	33.2	5.5	12.0	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	16.4	33.2	5.5	12.0	5.5
LOS	C	B	C	A	B	A
Approach Delay	18.8			7.2	11.7	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 59.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 56.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

LOS Engineering, Inc.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	79	95	1425	1310	55
Future Volume (veh/h)	28	79	95	1425	1310	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	86	103	1549	1424	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	211	322	293	2483	1863	831
Arrive On Green	0.12	0.12	0.08	0.70	0.52	0.52
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	30	86	103	1549	1424	60
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	0.9	2.6	1.6	13.2	18.1	1.1
Cycle Q Clear(g_c), s	0.9	2.6	1.6	13.2	18.1	1.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	211	322	293	2483	1863	831
V/C Ratio(X)	0.14	0.27	0.35	0.62	0.76	0.07
Avail Cap(c_a), veh/h	878	915	395	3852	3127	1395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	19.1	24.5	4.6	10.7	6.7
Incr Delay (d2), s/veh	0.3	0.4	0.7	0.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	2.7	5.7	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	19.5	25.2	4.8	11.4	6.7
LnGrp LOS	C	B	C	A	B	A
Approach Vol, veh/h	116			1652	1484	
Approach Delay, s/veh	20.4			6.1	11.2	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.5		11.3	9.9	35.6
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		15.2		4.6	3.6	20.1
Green Ext Time (p_c), s		11.7		0.4	0.1	9.7

Intersection Summary			
HCM 6th Ctrl Delay			8.9
HCM 6th LOS			A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	20	46	10	30	69	1325	40	1270	116
Future Volume (vph)	147	20	46	10	30	69	1325	40	1270	116
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	12.0	51.5	11.8	51.3	51.3
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.0%	51.5%	11.8%	51.3%	51.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.3	16.3		16.3	16.3	7.0	41.6	6.7	38.8	38.8
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.09	0.55	0.09	0.52	0.52
v/c Ratio	0.56	0.24		0.21	0.08	0.45	0.55	0.27	0.76	0.15
Control Delay	35.7	11.1		27.6	0.4	48.6	13.7	43.6	20.0	6.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	11.1		27.6	0.4	48.6	13.7	43.6	20.0	6.8
LOS	D	B		C	A	D	B	D	C	A
Approach Delay		26.3		18.1			15.4		19.6	
Approach LOS		C		B			B		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 75.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	20	70	46	10	30	69	1325	78	40	1270	116
Future Volume (veh/h)	147	20	70	46	10	30	69	1325	78	40	1270	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	22	76	50	11	33	75	1440	85	43	1380	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	86	297	303	58	369	99	2454	145	73	1717	766
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.06	0.50	0.50	0.04	0.48	0.48
Sat Flow, veh/h	1362	368	1273	891	248	1585	1781	4931	291	1781	3554	1585
Grp Volume(v), veh/h	160	0	98	61	0	33	75	994	531	43	1380	126
Grp Sat Flow(s),veh/h/ln	1362	0	1641	1139	0	1585	1781	1702	1818	1781	1777	1585
Q Serve(g_s), s	7.7	0.0	3.3	2.0	0.0	1.1	2.8	14.1	14.2	1.6	22.4	3.0
Cycle Q Clear(g_c), s	13.0	0.0	3.3	5.3	0.0	1.1	2.8	14.1	14.2	1.6	22.4	3.0
Prop In Lane	1.00		0.78	0.82		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	317	0	382	361	0	369	99	1694	905	73	1717	766
V/C Ratio(X)	0.50	0.00	0.26	0.17	0.00	0.09	0.76	0.59	0.59	0.59	0.80	0.16
Avail Cap(c_a), veh/h	638	0	769	685	0	743	180	2278	1216	175	2367	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	21.4	22.7	0.0	20.5	31.8	12.2	12.2	32.2	14.9	9.9
Incr Delay (d2), s/veh	1.2	0.0	0.4	0.2	0.0	0.1	11.2	0.3	0.6	7.4	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.3	0.8	0.0	0.4	1.5	4.7	5.2	0.8	8.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	21.7	22.9	0.0	20.6	43.0	12.5	12.8	39.6	16.4	10.0
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		258			94			1600			1549	
Approach Delay, s/veh		26.1			22.1			14.0			16.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	39.8		20.6	8.9	38.8		20.6				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.7	45.7		* 32	6.9	45.5		* 32				
Max Q Clear Time (g_c+I1), s	3.6	16.2		15.0	4.8	24.4		7.3				
Green Ext Time (p_c), s	0.0	9.0		0.9	0.0	8.6		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		16.2
HCM 6th LOS		B

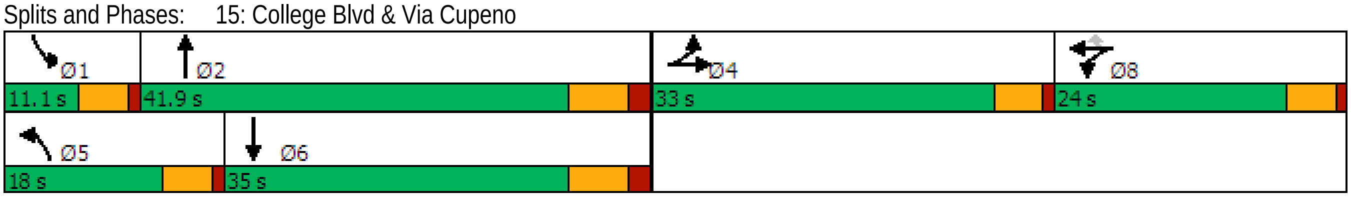
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	10	6	419	1250	2	1156
Future Volume (vph)	9	10	6	419	1250	2	1156
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	18.0	41.9	11.1	35.0
Total Split (%)	30.0%	21.8%	21.8%	16.4%	38.1%	10.1%	31.8%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	16.1	9.3	9.3	13.2	45.3	6.1	28.8
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.52	0.07	0.33
v/c Ratio	0.69	0.41	0.02	0.88	0.56	0.02	0.82
Control Delay	29.4	45.6	0.2	57.6	18.4	44.0	33.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	45.6	0.2	57.6	18.4	44.0	33.7
LOS	C	D	A	E	B	D	C
Approach Delay	29.4	41.9			27.7		33.7
Approach LOS	C	D			C		C

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 86.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

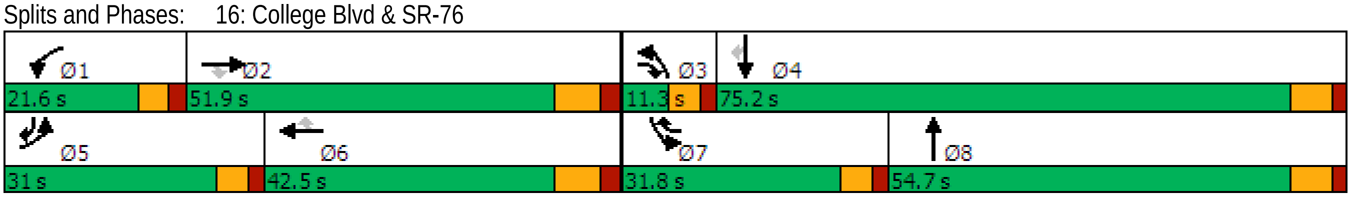


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	9	175	62	10	6	419	1250	99	2	1156	112
Future Volume (veh/h)	260	9	175	62	10	6	419	1250	99	2	1156	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	10	190	67	11	7	455	1359	108	2	1257	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	16	301	92	15	94	535	2253	179	6	1494	145
Arrive On Green	0.20	0.20	0.20	0.06	0.06	0.06	0.15	0.47	0.47	0.00	0.32	0.32
Sat Flow, veh/h	1781	80	1517	1540	253	1585	3456	4822	383	1781	4732	459
Grp Volume(v), veh/h	283	0	200	78	0	7	455	959	508	2	904	475
Grp Sat Flow(s),veh/h/ln	1781	0	1597	1793	0	1585	1728	1702	1801	1781	1702	1788
Q Serve(g_s), s	12.2	0.0	9.2	3.4	0.0	0.3	10.3	16.8	16.8	0.1	19.9	19.9
Cycle Q Clear(g_c), s	12.2	0.0	9.2	3.4	0.0	0.3	10.3	16.8	16.8	0.1	19.9	19.9
Prop In Lane	1.00		0.95	0.86		1.00	1.00		0.21	1.00		0.26
Lane Grp Cap(c), veh/h	353	0	317	107	0	94	535	1590	842	6	1074	564
V/C Ratio(X)	0.80	0.00	0.63	0.73	0.00	0.07	0.85	0.60	0.60	0.34	0.84	0.84
Avail Cap(c_a), veh/h	619	0	555	423	0	374	553	1590	842	133	1191	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	29.6	37.3	0.0	35.8	33.2	15.9	15.9	40.1	25.7	25.7
Incr Delay (d2), s/veh	4.2	0.0	2.1	9.2	0.0	0.3	11.8	0.6	1.2	31.8	5.2	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	3.6	1.8	0.0	0.1	5.1	6.2	6.7	0.1	8.4	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	0.0	31.7	46.5	0.0	36.1	44.9	16.6	17.2	71.8	30.9	35.0
LnGrp LOS	D	A	C	D	A	D	D	B	B	E	C	D
Approach Vol, veh/h		483			85			1922			1381	
Approach Delay, s/veh		33.6			45.6			23.4			32.3	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	44.4		21.0	17.6	32.2		9.8				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	35.1		28.0	12.9	28.2		19.0				
Max Q Clear Time (g_c+I1), s	2.1	18.8		14.2	12.3	21.9		5.4				
Green Ext Time (p_c), s	0.0	6.8		1.8	0.1	3.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	500	1317	50	307	875	564	42	680	515	711	401
Future Volume (vph)	500	1317	50	307	875	564	42	680	515	711	401
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	31.0	51.9	11.3	21.6	42.5	31.8	11.3	54.7	31.8	75.2	31.0
Total Split (%)	19.4%	32.4%	7.1%	13.5%	26.6%	19.9%	7.1%	34.2%	19.9%	47.0%	19.4%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	25.3	43.9	57.5	15.9	34.5	68.6	5.6	47.9	26.1	70.7	102.8
Actuated g/C Ratio	0.16	0.27	0.36	0.10	0.22	0.43	0.04	0.30	0.16	0.44	0.64
v/c Ratio	1.00	1.03	0.09	0.98	0.87	0.83	0.38	1.04	1.00	0.49	0.42
Control Delay	105.1	87.1	0.3	114.2	70.0	44.5	84.9	90.6	103.7	33.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.1	87.1	0.3	114.2	70.0	44.5	84.9	90.6	103.7	33.8	13.2
LOS	F	F	A	F	E	D	F	F	F	C	B
Approach Delay		89.6			69.5			90.4		50.8	
Approach LOS		F			E			F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 74.1	Intersection LOS: E
Intersection Capacity Utilization 99.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	500	1317	50	307	875	564	42	680	321	515	711	401
Future Volume (veh/h)	500	1317	50	307	875	564	42	680	321	515	711	401
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	543	1432	54	334	951	613	46	739	349	560	773	436
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1401	470	343	1101	600	78	701	331	564	1564	948
Arrive On Green	0.16	0.27	0.27	0.10	0.22	0.22	0.02	0.30	0.30	0.16	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2343	1105	3456	3554	1585
Grp Volume(v), veh/h	543	1432	54	334	951	613	46	560	528	560	773	436
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1671	1728	1777	1585
Q Serve(g_s), s	25.1	43.9	4.0	15.4	28.7	34.5	2.1	47.9	47.9	25.9	24.9	24.4
Cycle Q Clear(g_c), s	25.1	43.9	4.0	15.4	28.7	34.5	2.1	47.9	47.9	25.9	24.9	24.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	546	1401	470	343	1101	600	78	532	500	564	1564	948
V/C Ratio(X)	0.99	1.02	0.11	0.97	0.86	1.02	0.59	1.05	1.05	0.99	0.49	0.46
Avail Cap(c_a), veh/h	546	1401	470	343	1101	600	121	532	500	564	1564	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	58.0	41.0	71.8	60.5	49.7	77.5	56.0	56.1	66.9	32.1	17.8
Incr Delay (d2), s/veh	36.8	29.8	0.1	41.1	7.3	42.2	7.1	53.8	55.4	36.1	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	22.8	1.6	8.8	13.2	30.9	1.0	29.4	27.9	14.3	10.9	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.1	87.8	41.1	112.9	67.8	91.9	84.5	109.8	111.5	103.0	32.3	18.2
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	C	B
Approach Vol, veh/h		2029			1898			1134			1769	
Approach Delay, s/veh		90.9			83.5			109.6			51.2	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	51.9	9.3	77.2	31.0	42.5	31.8	54.7
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 16	43.9	* 5.6	68.4	* 25	34.5	* 26	47.9
Max Q Clear Time (g_c+I1), s	17.4	45.9	4.1	26.9	27.1	36.5	27.9	49.9
Green Ext Time (p_c), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.7
HCM 6th LOS	F

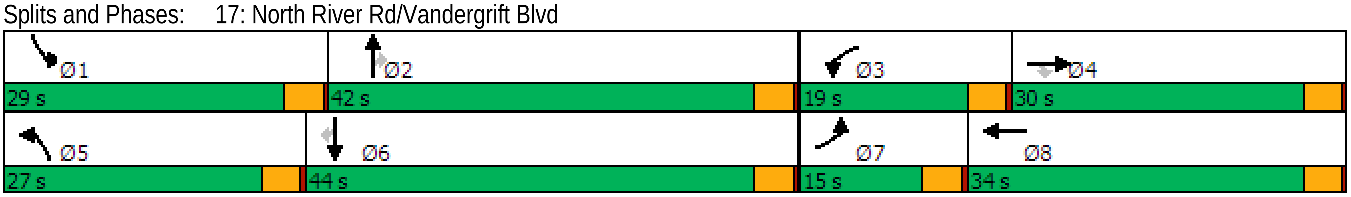
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	87	121	300	106	225	684	422	212	882	53
Future Volume (vph)	70	87	121	300	106	225	684	422	212	882	53
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	15.0	30.0	30.0	19.0	34.0	27.0	42.0	42.0	29.0	44.0	44.0
Total Split (%)	12.5%	25.0%	25.0%	15.8%	28.3%	22.5%	35.0%	35.0%	24.2%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.2	13.0	13.0	13.7	20.0	18.6	41.1	41.1	18.1	40.6	40.6
Actuated g/C Ratio	0.09	0.13	0.13	0.13	0.20	0.18	0.40	0.40	0.18	0.40	0.40
v/c Ratio	0.48	0.40	0.42	0.71	0.58	0.76	0.36	0.50	0.73	0.68	0.09
Control Delay	57.8	46.5	11.2	53.0	39.5	56.9	24.0	4.8	55.3	30.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	46.5	11.2	53.0	39.5	56.9	24.0	4.8	55.3	30.6	3.0
LOS	E	D	B	D	D	E	C	A	E	C	A
Approach Delay		33.9			47.6		23.5			33.9	
Approach LOS		C			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.1	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 31.7	Intersection LOS: C
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	87	121	300	106	89	225	684	422	212	882	53
Future Volume (veh/h)	70	87	121	300	106	89	225	684	422	212	882	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	95	132	326	115	97	245	743	459	230	959	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	208	176	411	164	138	286	2264	703	271	1547	690
Arrive On Green	0.06	0.11	0.11	0.12	0.17	0.17	0.16	0.44	0.44	0.15	0.44	0.44
Sat Flow, veh/h	1781	1870	1585	3456	937	791	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	76	95	132	326	0	212	245	743	459	230	959	58
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1728	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.9	4.4	7.4	8.4	0.0	10.6	12.3	8.7	20.9	11.5	19.2	2.0
Cycle Q Clear(g_c), s	3.9	4.4	7.4	8.4	0.0	10.6	12.3	8.7	20.9	11.5	19.2	2.0
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	208	176	411	0	302	286	2264	703	271	1547	690
V/C Ratio(X)	0.77	0.46	0.75	0.79	0.00	0.70	0.86	0.33	0.65	0.85	0.62	0.08
Avail Cap(c_a), veh/h	213	529	449	564	0	564	446	2264	703	485	1547	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	38.2	39.6	39.4	0.0	35.6	37.6	16.7	20.0	37.9	20.1	15.2
Incr Delay (d2), s/veh	12.0	1.6	6.2	5.4	0.0	3.0	9.7	0.4	4.7	7.2	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	3.2	3.8	0.0	4.6	6.0	3.4	8.2	5.5	8.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	39.8	45.8	44.8	0.0	38.6	47.2	17.1	24.7	45.1	21.9	15.4
LnGrp LOS	D	D	D	D	A	D	D	B	C	D	C	B
Approach Vol, veh/h		303			538			1447			1247	
Approach Delay, s/veh		46.2			42.3			24.6			25.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	44.7	14.9	14.2	18.7	44.0	9.1	20.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	38.0	15.0	26.0	23.0	40.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	13.5	22.9	10.4	9.4	14.3	21.2	5.9	12.6
Green Ext Time (p_c), s	0.5	6.2	0.5	0.8	0.5	7.0	0.1	1.1

Intersection Summary			
HCM 6th Ctrl Delay			29.6
HCM 6th LOS			C

Appendix G

SANDAG Series 12 Select Zone Assignment (Existing Network)

SANDAG Series 12
2035 Highway Network
Select Zone Assignment

OCEANSIDE Area

Model Run 11/26/18
SR12 V3 2035 RC alternatvle 1
2035 - Revenue Constrained

Forecasted Volumes:
- # Unadjusted Volume (in Thousands)
- # Select Link Volume
- # Select Link Percentage
- # Traffic Analysis Zone

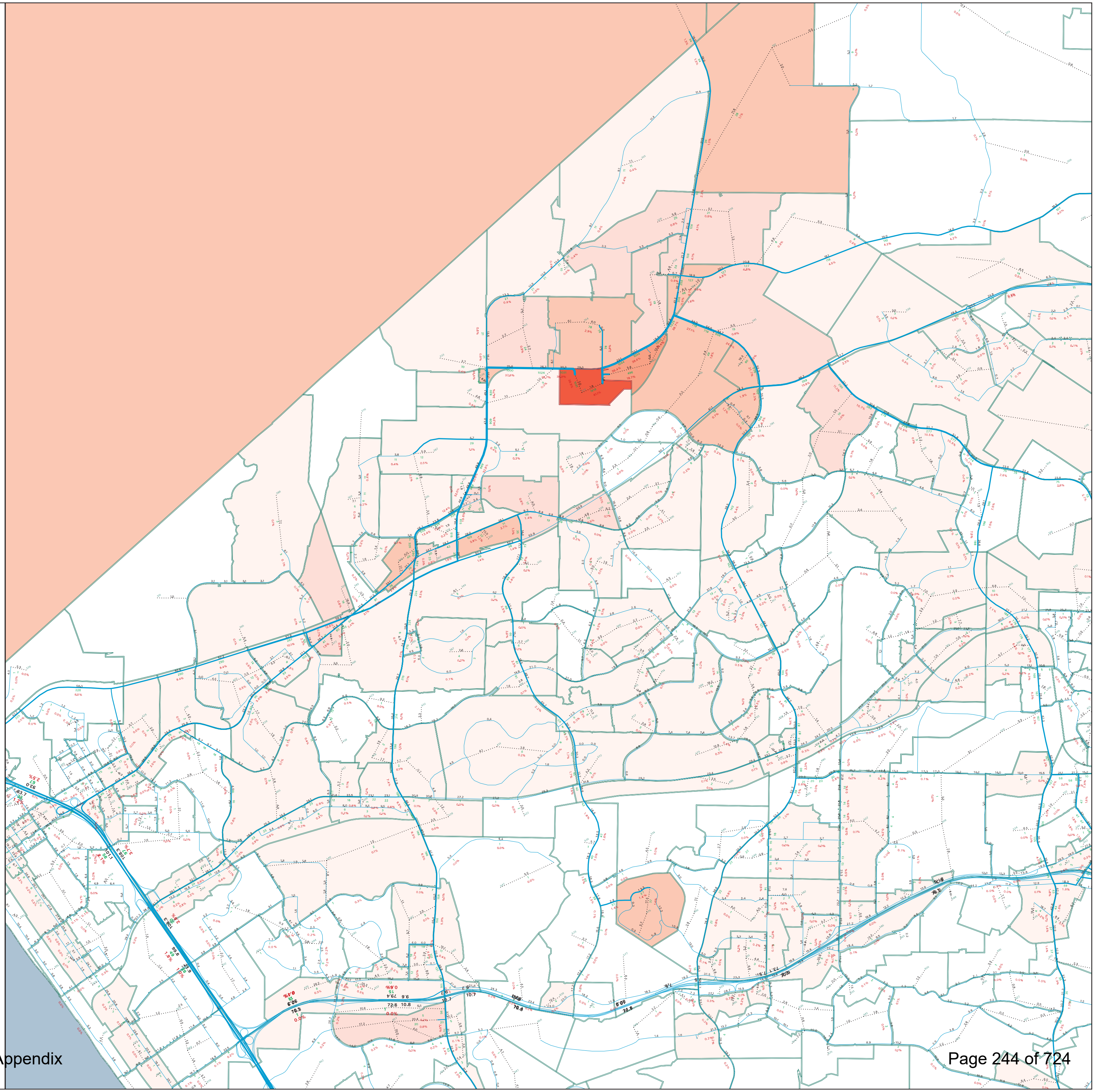
Link Distributions:
- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

Zonal Distributions:
- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 1,000 2,000
Meters 120 360 600

SANDAG
San Diego's Regional Planning Agency

November 27, 2018



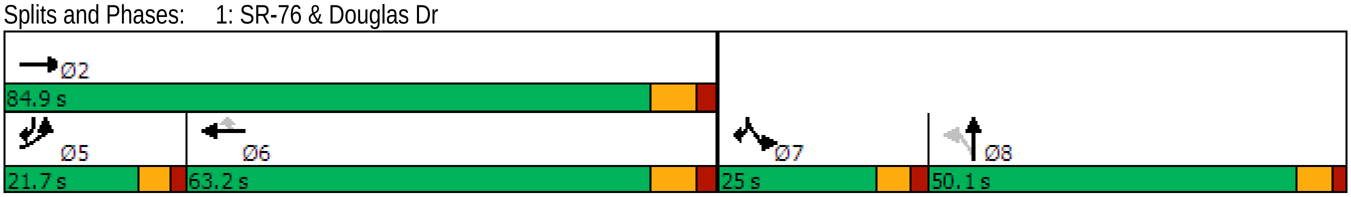
Appendix H

Existing + Project Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	247	870	1761	206	249	523	
Future Volume (vph)	247	870	1761	206	249	523	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	21.7	84.9	63.2	63.2	25.0		50.1
Total Split (%)	13.6%	53.1%	39.5%	39.5%	15.6%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	14.9	75.8	55.2	55.2	18.9	39.9	
Actuated g/C Ratio	0.14	0.70	0.51	0.51	0.17	0.37	
v/c Ratio	0.57	0.38	1.07	0.25	0.88	0.41	
Control Delay	49.1	7.3	68.7	2.7	73.7	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	49.1	7.3	68.7	2.7	73.7	2.9	
LOS	D	A	E	A	E	A	
Approach Delay		16.6	61.8				
Approach LOS		B	E				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 108.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 41.5	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



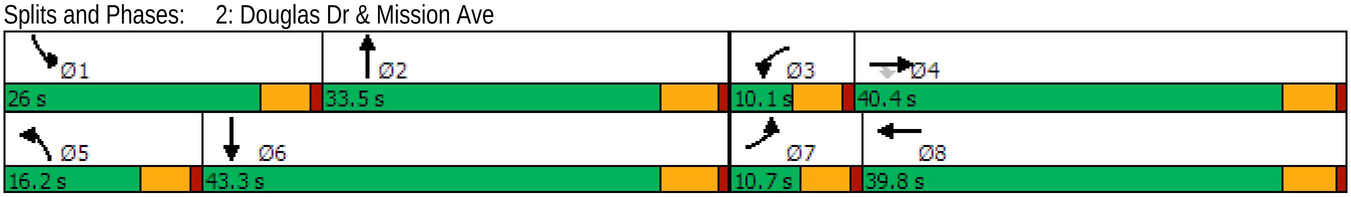
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	870	0	0	1761	206	0	0	0	249	0	523
Future Volume (veh/h)	247	870	0	0	1761	206	0	0	0	249	0	523
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	268	946	0	0	1914	224	0	0	0	271	0	568
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	424	2480	0	0	1852	826	0	2	0	301	0	0
Arrive On Green	0.12	0.70	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.17	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	271	
Grp Volume(v), veh/h	268	946	0	0	1914	224	0	0	0	271	69.2	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	7.8	11.6	0.0	0.0	55.2	8.3	0.0	0.0	0.0	15.8		
Cycle Q Clear(g_c), s	7.8	11.6	0.0	0.0	55.2	8.3	0.0	0.0	0.0	15.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	424	2480	0	0	1852	826	0	2	0	301		
V/C Ratio(X)	0.63	0.38	0.00	0.00	1.03	0.27	0.00	0.00	0.00	0.90		
Avail Cap(c_a), veh/h	522	2580	0	0	1852	826	0	777	0	318		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	44.2	6.6	0.0	0.0	25.4	14.1	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.0	30.0	0.2	0.0	0.0	0.0	26.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.4	3.9	0.0	0.0	29.4	3.0	0.0	0.0	0.0	9.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	6.7	0.0	0.0	55.4	14.3	0.0	0.0	0.0	69.2		
LnGrp LOS	D	A	A	A	F	B	A	A	A	E		
Approach Vol, veh/h		1214			2138			0				
Approach Delay, s/veh		15.3			51.1			0.0				
Approach LOS		B			D							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		81.9			18.7	63.2	24.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		76.9			* 16	55.2	18.9	44.0				
Max Q Clear Time (g_c+I1), s		13.6			9.8	57.2	17.8	0.0				
Green Ext Time (p_c), s		5.5			0.6	0.0	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			40.5									
HCM 6th LOS			D									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	67	258	62	47	430	111	300	398	711
Future Volume (vph)	67	258	62	47	430	111	300	398	711
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.7	40.4	40.4	10.1	39.8	16.2	33.5	26.0	43.3
Total Split (%)	9.7%	36.7%	36.7%	9.2%	36.2%	14.7%	30.5%	23.6%	39.4%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.8	25.0	25.0	5.2	24.5	10.2	17.9	21.8	29.5
Actuated g/C Ratio	0.06	0.28	0.28	0.06	0.27	0.11	0.20	0.24	0.33
v/c Ratio	0.33	0.28	0.12	0.50	0.79	0.60	0.47	1.00	0.74
Control Delay	50.0	26.9	0.4	64.2	29.9	55.7	34.3	82.9	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	26.9	0.4	64.2	29.9	55.7	34.3	82.9	32.0
LOS	D	C	A	E	C	E	C	F	C
Approach Delay		26.7			31.9		40.0		49.1
Approach LOS		C			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 89.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 39.7	Intersection LOS: D
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	258	62	47	430	323	111	300	9	398	711	75
Future Volume (veh/h)	67	258	62	47	430	323	111	300	9	398	711	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	280	67	51	467	351	121	326	10	433	773	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	1066	475	75	566	424	165	454	14	465	965	102
Arrive On Green	0.05	0.30	0.30	0.04	0.29	0.29	0.09	0.13	0.13	0.26	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	1781	1936	1450	1781	3520	108	1781	3242	344
Grp Volume(v), veh/h	73	280	67	51	429	389	121	164	172	433	424	431
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1609	1781	1777	1851	1781	1777	1808
Q Serve(g_s), s	1.6	4.8	2.5	2.3	18.0	18.1	5.3	7.1	7.1	19.0	17.6	17.6
Cycle Q Clear(g_c), s	1.6	4.8	2.5	2.3	18.0	18.1	5.3	7.1	7.1	19.0	17.6	17.6
Prop In Lane	1.00		1.00	1.00		0.90	1.00		0.06	1.00		0.19
Lane Grp Cap(c), veh/h	173	1066	475	75	519	470	165	229	239	465	529	538
V/C Ratio(X)	0.42	0.26	0.14	0.68	0.83	0.83	0.73	0.72	0.72	0.93	0.80	0.80
Avail Cap(c_a), veh/h	242	1555	693	111	764	692	247	615	641	465	833	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	21.3	20.5	37.8	26.4	26.4	35.3	33.4	33.5	28.8	25.9	25.9
Incr Delay (d2), s/veh	1.6	0.1	0.1	10.0	4.8	5.4	6.2	4.2	4.1	25.4	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	0.9	1.2	8.0	7.3	2.5	3.2	3.4	11.0	7.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	21.4	20.6	47.8	31.2	31.9	41.5	37.6	37.5	54.3	29.0	28.9
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	C	C
Approach Vol, veh/h		420			869			457			1288	
Approach Delay, s/veh		24.3			32.5			38.6			37.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	16.1	8.5	29.4	12.5	29.6	9.1	28.8
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	20.9	27.7	5.0	35.0	11.1	37.5	5.6	34.4
Max Q Clear Time (g_c+I1), s	21.0	9.1	4.3	6.8	7.3	19.6	3.6	20.1
Green Ext Time (p_c), s	0.0	1.2	0.0	1.6	0.1	3.6	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

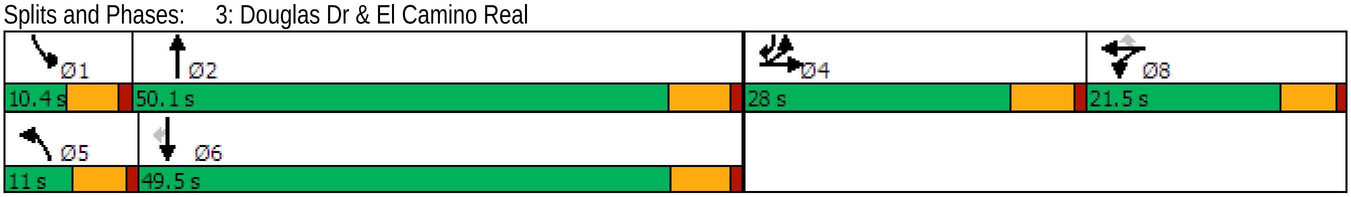
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	331	17	36	33	1	40	564	8	1101	1126
Future Volume (vph)	331	17	36	33	1	40	564	8	1101	1126
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	28.0	28.0		21.5	21.5	11.0	50.1	10.4	49.5	28.0
Total Split (%)	25.5%	25.5%		19.5%	19.5%	10.0%	45.5%	9.5%	45.0%	25.5%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	19.9	19.9	89.6	11.5	11.5	6.1	41.2	5.5	37.7	66.4
Actuated g/C Ratio	0.22	0.22	1.00	0.13	0.13	0.07	0.46	0.06	0.42	0.74
v/c Ratio	0.47	0.04	0.02	0.48	0.00	0.36	0.40	0.08	0.80	0.59
Control Delay	36.7	35.1	0.0	49.5	0.0	57.3	18.2	51.6	30.3	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	35.1	0.0	49.5	0.0	57.3	18.2	51.6	30.3	10.4
LOS	D	D	A	D	A	E	B	D	C	B
Approach Delay		33.2		49.1			20.6		20.4	
Approach LOS		C		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 89.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	17	36	69	33	1	40	564	36	8	1101	1126
Future Volume (veh/h)	331	17	36	69	33	1	40	564	36	8	1101	1126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	360	18	0	75	36	1	43	613	39	9	1197	1224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	261		98	47	127	67	1675	106	20	1661	1693
Arrive On Green	0.14	0.14	0.00	0.08	0.08	0.08	0.04	0.49	0.49	0.01	0.47	0.47
Sat Flow, veh/h	3456	1870	1585	1222	587	1585	1781	3393	216	1781	3554	2790
Grp Volume(v), veh/h	360	18	0	111	0	1	43	321	331	9	1197	1224
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1832	1781	1777	1395
Q Serve(g_s), s	8.5	0.7	0.0	5.1	0.0	0.0	2.0	9.4	9.5	0.4	22.9	26.0
Cycle Q Clear(g_c), s	8.5	0.7	0.0	5.1	0.0	0.0	2.0	9.4	9.5	0.4	22.9	26.0
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	482	261		145	0	127	67	877	904	20	1661	1693
V/C Ratio(X)	0.75	0.07		0.77	0.00	0.01	0.64	0.37	0.37	0.45	0.72	0.72
Avail Cap(c_a), veh/h	891	482		342	0	300	118	923	951	105	1828	1824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	31.6	0.0	38.1	0.0	35.8	40.1	13.2	13.2	41.5	18.1	11.6
Incr Delay (d2), s/veh	2.3	0.1	0.0	8.2	0.0	0.0	9.8	0.3	0.2	14.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.3	0.0	2.5	0.0	0.0	1.1	3.6	3.7	0.3	9.0	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	31.7	0.0	46.3	0.0	35.8	49.9	13.5	13.5	56.4	19.4	13.0
LnGrp LOS	D	C		D	A	D	D	B	B	E	B	B
Approach Vol, veh/h		378	A		112			695			2430	
Approach Delay, s/veh		37.0			46.2			15.7			16.3	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	47.9		18.0	8.6	45.7		12.3				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	43.9		21.8	5.6	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.4	11.5		10.5	4.0	28.0		7.1				
Green Ext Time (p_c), s	0.0	2.8		1.3	0.0	11.5		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			19.3
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

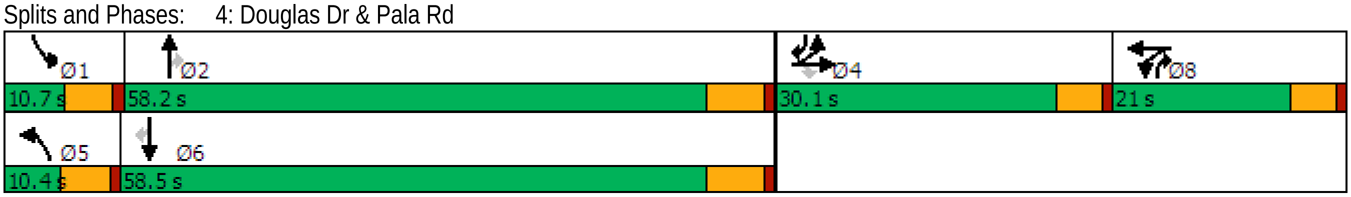
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	3	92	9	2	37	870	16	15	1975	67
Future Volume (vph)	66	3	92	9	2	37	870	16	15	1975	67
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	58.2	21.0	10.7	58.5	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	8.7%	48.5%	17.5%	8.9%	48.8%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.1	10.1	10.1	6.6	6.6	5.1	58.7	64.6	5.4	56.8	75.6
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.06	0.65	0.71	0.06	0.63	0.83
v/c Ratio	0.20	0.20	0.35	0.08	0.20	0.40	0.41	0.01	0.15	0.97	0.05
Control Delay	39.8	39.7	7.4	46.4	22.5	58.5	11.7	0.0	50.1	34.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	39.7	7.4	46.4	22.5	58.5	11.7	0.0	50.1	34.3	1.1
LOS	D	D	A	D	C	E	B	A	D	C	A
Approach Delay		21.3			28.8		13.4			33.3	
Approach LOS		C			C		B			C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 90.7
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 26.9 | Intersection LOS: C
Intersection Capacity Utilization 79.0% | ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	3	92	9	2	24	37	870	16	15	1975	67
Future Volume (veh/h)	66	3	92	9	2	24	37	870	16	15	1975	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	0	100	10	2	26	40	946	17	16	2147	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	0	142	73	5	61	63	2152	1025	33	2092	1075
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.04	0.61	0.61	0.02	0.59	0.59
Sat Flow, veh/h	3563	0	1585	1781	114	1488	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	74	0	100	10	0	28	40	946	17	16	2147	73
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1603	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	5.4	0.5	0.0	1.5	2.0	12.7	0.3	0.8	52.3	1.4
Cycle Q Clear(g_c), s	1.7	0.0	5.4	0.5	0.0	1.5	2.0	12.7	0.3	0.8	52.3	1.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	0	142	73	0	66	63	2152	1025	33	2092	1075
V/C Ratio(X)	0.23	0.00	0.70	0.14	0.00	0.43	0.64	0.44	0.02	0.49	1.03	0.07
Avail Cap(c_a), veh/h	1002	0	446	319	0	287	100	2152	1025	106	2092	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	39.3	41.1	0.0	41.6	42.3	9.4	5.6	43.2	18.3	4.8
Incr Delay (d2), s/veh	0.4	0.0	6.2	0.8	0.0	4.3	10.2	0.1	0.0	10.9	26.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.3	0.2	0.0	0.7	1.0	4.5	0.1	0.4	26.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	45.5	41.9	0.0	45.9	52.5	9.6	5.6	54.1	45.0	4.8
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	F	A
Approach Vol, veh/h		174			38			1003			2236	
Approach Delay, s/veh		42.3			44.8			11.2			43.8	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	60.0		13.1	8.5	58.5		8.8
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.3	52.0		25.0	5.0	52.3		15.9
Max Q Clear Time (g_c+I1), s	2.8	14.7		7.4	4.0	54.3		3.5
Green Ext Time (p_c), s	0.0	5.5		0.6	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

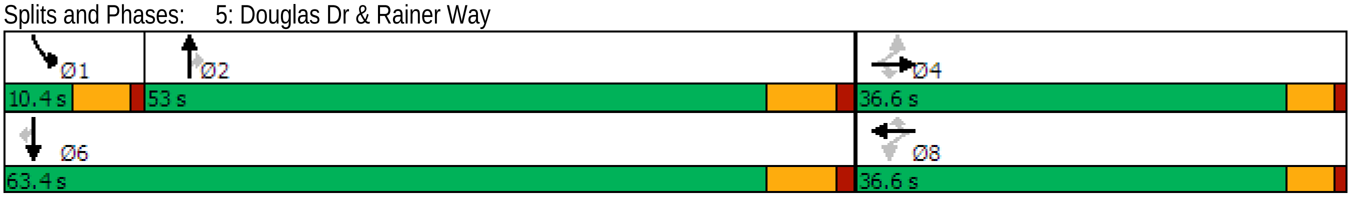
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	2	109	67	4	6	950	31	2	1887	37
Future Volume (vph)	15	2	109	67	4	6	950	31	2	1887	37
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.7	12.7		12.7	12.7	58.3	58.3	5.0	60.1	60.1
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.69	0.69	0.06	0.71	0.71
v/c Ratio		0.08	0.37		0.38	0.02	0.42	0.03	0.02	0.81	0.04
Control Delay		27.9	11.5		35.1	0.2	8.9	0.3	41.5	14.2	4.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		27.9	11.5		35.1	0.2	8.9	0.3	41.5	14.2	4.5
LOS		C	B		D	A	A	A	D	B	A
Approach Delay		13.7			32.2		8.6			14.0	
Approach LOS		B			C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 84.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



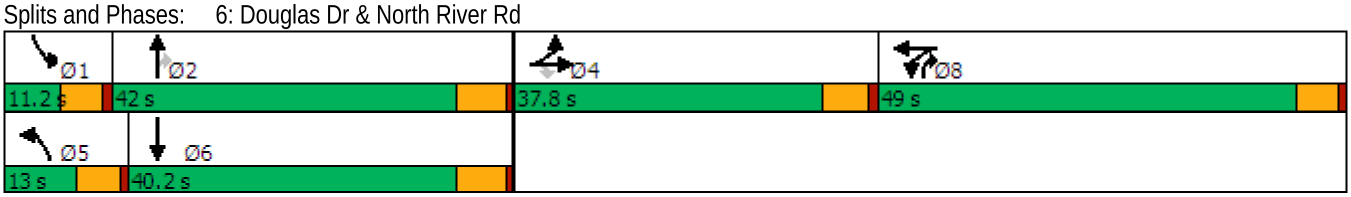
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	2	109	67	4	6	0	950	31	2	1887	37
Future Volume (veh/h)	15	2	109	67	4	6	0	950	31	2	1887	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	2	118	73	4	7	0	1033	34	2	2051	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	76	6	504	78	2	504	0	1819	811	5	2021	902
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.00	0.51	0.51	0.00	0.57	0.57
Sat Flow, veh/h	23	18	1585	24	8	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	18	0	118	77	0	7	0	1033	34	2	2051	40
Grp Sat Flow(s),veh/h/ln	41	0	1585	32	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.6	0.0	5.5	0.6	0.0	0.3	0.0	19.9	1.1	0.1	56.7	1.1
Cycle Q Clear(g_c), s	31.7	0.0	5.5	31.7	0.0	0.3	0.0	19.9	1.1	0.1	56.7	1.1
Prop In Lane	0.89		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	504	80	0	504	0	1819	811	5	2021	902
V/C Ratio(X)	0.22	0.00	0.23	0.96	0.00	0.01	0.00	0.57	0.04	0.42	1.01	0.04
Avail Cap(c_a), veh/h	86	0	509	85	0	509	0	1819	811	89	2022	902
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	0.0	25.0	48.9	0.0	23.3	0.0	16.7	12.1	49.6	21.5	9.5
Incr Delay (d2), s/veh	1.4	0.0	0.2	82.0	0.0	0.0	0.0	0.4	0.0	49.9	23.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	3.7	0.0	0.1	0.0	7.8	0.4	0.1	27.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	0.0	25.3	131.0	0.0	23.3	0.0	17.2	12.2	99.5	45.2	9.5
LnGrp LOS	D	A	C	F	A	C	A	B	B	F	F	A
Approach Vol, veh/h		136			84			1067			2093	
Approach Delay, s/veh		27.6			122.0			17.0			44.6	
Approach LOS		C			F			B			D	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.7	57.7		36.4		63.4		36.4				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.1	21.9		33.7		58.7		33.7				
Green Ext Time (p_c), s	0.0	5.8		0.0		0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		37.1
HCM 6th LOS		D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	95	186	982	49	71	431	374	18	703
Future Volume (vph)	53	95	186	982	49	71	431	374	18	703
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	49.0	49.0	13.0	42.0	49.0	11.2	40.2
Total Split (%)	27.0%	27.0%	27.0%	35.0%	35.0%	9.3%	30.0%	35.0%	8.0%	28.7%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	15.8	15.8	15.8	43.9	43.9	7.6	41.6	89.7	5.8	32.7
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.36	0.06	0.34	0.73	0.05	0.27
v/c Ratio	0.26	0.23	0.68	0.93	0.89dl	0.70	0.39	0.19	0.24	0.82
Control Delay	50.0	48.3	34.8	63.4	34.7	90.4	34.6	0.8	67.8	51.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	48.3	34.8	63.4	34.7	90.4	34.6	0.8	67.8	51.5
LOS	D	D	C	E	C	F	C	A	E	D
Approach Delay		41.1			48.1		24.7			51.9
Approach LOS		D			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 123	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 41.4	Intersection LOS: D
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	95	186	982	49	21	71	431	374	18	703	9
Future Volume (veh/h)	53	95	186	982	49	21	71	431	374	18	703	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	103	202	1067	53	23	77	468	407	20	764	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	559	249	1215	422	183	98	1020	1752	36	907	12
Arrive On Green	0.16	0.16	0.16	0.34	0.34	0.34	0.05	0.29	0.29	0.02	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3563	1237	537	1781	3554	2790	1781	3592	47
Grp Volume(v), veh/h	58	103	202	1067	0	76	77	468	407	20	378	396
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1774	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	3.3	3.0	14.5	33.1	0.0	3.5	5.0	12.7	7.5	1.3	23.7	23.7
Cycle Q Clear(g_c), s	3.3	3.0	14.5	33.1	0.0	3.5	5.0	12.7	7.5	1.3	23.7	23.7
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	280	559	249	1215	0	605	98	1020	1752	36	449	470
V/C Ratio(X)	0.21	0.18	0.81	0.88	0.00	0.13	0.79	0.46	0.23	0.55	0.84	0.84
Avail Cap(c_a), veh/h	485	968	432	1322	0	658	115	1083	1802	88	514	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	43.0	47.8	36.4	0.0	26.6	54.8	34.4	9.5	57.0	41.7	41.7
Incr Delay (d2), s/veh	0.5	0.2	8.6	6.9	0.0	0.1	25.7	0.7	0.1	12.3	13.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	6.3	15.4	0.0	1.5	2.9	5.6	4.9	0.7	11.9	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	43.2	56.4	43.3	0.0	26.8	80.5	35.1	9.7	69.4	54.7	54.2
LnGrp LOS	D	D	E	D	A	C	F	D	A	E	D	D
Approach Vol, veh/h		363			1143			952			794	
Approach Delay, s/veh		50.6			42.2			27.9			54.8	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	39.9		24.3	11.9	35.9		45.5				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	5.8	35.8		32.0	7.6	34.0		43.6				
Max Q Clear Time (g_c+I1), s	3.3	14.7		16.5	7.0	25.7		35.1				
Green Ext Time (p_c), s	0.0	8.5		2.0	0.0	3.9		5.0				

Intersection Summary			
HCM 6th Ctrl Delay			42.0
HCM 6th LOS			D

Notes

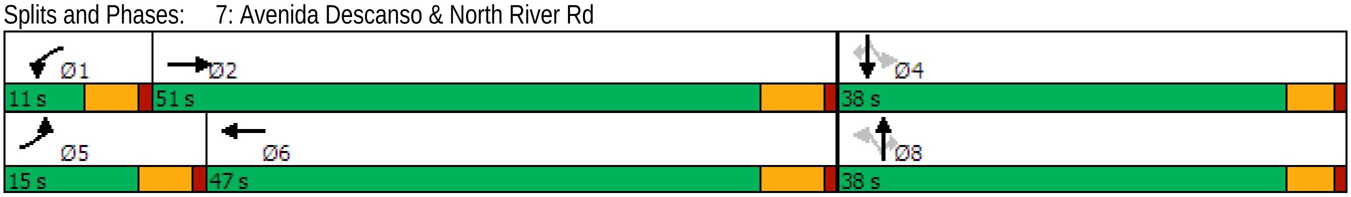
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	446	18	887	2	2	30	111	12	104
Future Volume (vph)	51	446	18	887	2	2	30	111	12	104
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	15.0	51.0	11.0	47.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	15.0%	51.0%	11.0%	47.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	8.3	30.6	6.8	25.2		14.0	14.0		14.0	14.0
Actuated g/C Ratio	0.14	0.52	0.12	0.43		0.24	0.24		0.24	0.24
v/c Ratio	0.22	0.26	0.10	0.66		0.01	0.07		0.40	0.24
Control Delay	33.4	9.0	36.3	17.5		21.8	0.3		26.3	6.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	33.4	9.0	36.3	17.5		21.8	0.3		26.3	6.7
LOS	C	A	D	B		C	A		C	A
Approach Delay		11.5		17.9		2.6			17.4	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 58.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	446	5	18	887	44	2	2	30	111	12	104
Future Volume (veh/h)	51	446	5	18	887	44	2	2	30	111	12	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	485	5	20	964	48	2	2	33	121	13	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1296	13	40	1164	58	69	48	669	90	5	669
Arrive On Green	0.04	0.36	0.36	0.02	0.34	0.34	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1781	3603	37	1781	3445	172	1	114	1585	8	13	1585
Grp Volume(v), veh/h	55	239	251	20	497	515	4	0	33	134	0	113
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1839	115	0	1585	21	0	1585
Q Serve(g_s), s	2.4	7.9	7.9	0.9	20.4	20.4	0.1	0.0	1.0	0.2	0.0	3.5
Cycle Q Clear(g_c), s	2.4	7.9	7.9	0.9	20.4	20.4	33.4	0.0	1.0	33.4	0.0	3.5
Prop In Lane	1.00		0.02	1.00		0.09	0.50		1.00	0.90		1.00
Lane Grp Cap(c), veh/h	79	639	670	40	600	621	117	0	669	96	0	669
V/C Ratio(X)	0.70	0.37	0.37	0.50	0.83	0.83	0.03	0.00	0.05	1.40	0.00	0.17
Avail Cap(c_a), veh/h	223	1015	1065	133	925	958	117	0	669	96	0	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	18.7	18.7	38.2	24.1	24.1	19.5	0.0	13.5	37.8	0.0	14.2
Incr Delay (d2), s/veh	10.6	0.4	0.3	9.4	3.8	3.7	0.1	0.0	0.0	232.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.2	3.3	0.5	8.7	9.0	0.0	0.0	0.3	8.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	19.1	19.1	47.6	27.9	27.7	19.6	0.0	13.5	269.9	0.0	14.3
LnGrp LOS	D	B	B	D	C	C	B	A	B	F	A	B
Approach Vol, veh/h		545			1032			37			247	
Approach Delay, s/veh		22.0			28.2			14.2			153.0	
Approach LOS		C			C			B			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	34.3		38.0	8.6	32.6		38.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	45.2		33.4	9.9	41.2		33.4				
Max Q Clear Time (g_c+I1), s	2.9	9.9		35.4	4.4	22.4		35.4				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	4.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			42.7
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	573	955	7	9	26
Future Vol, veh/h	12	573	955	7	9	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	623	1038	8	10	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1046	0	-	0	1380	523
Stage 1	-	-	-	-	1042	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	661	-	-	-	135	499
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	661	-	-	-	132	499
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	661	-	-	-	291
HCM Lane V/C Ratio	0.02	-	-	-	0.131
HCM Control Delay (s)	10.6	-	-	-	19.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	537	26	26	818	5	102	0	102	15	0	40
Future Vol, veh/h	22	537	26	26	818	5	102	0	102	15	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	584	28	28	889	5	111	0	111	16	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	894	0	0	612	0	0	1147	-	306	1288	1608	447
Stage 1	-	-	-	-	-	-	646	-	-	948	948	-
Stage 2	-	-	-	-	-	-	501	-	-	340	660	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	755	-	-	963	-	-	154	0	690	121	104	559
Stage 1	-	-	-	-	-	-	427	0	-	280	338	-
Stage 2	-	-	-	-	-	-	521	0	-	648	458	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	755	-	-	963	-	-	136	-	690	97	98	559
Mov Cap-2 Maneuver	-	-	-	-	-	-	136	-	-	97	98	-
Stage 1	-	-	-	-	-	-	413	-	-	271	328	-
Stage 2	-	-	-	-	-	-	467	-	-	527	443	-

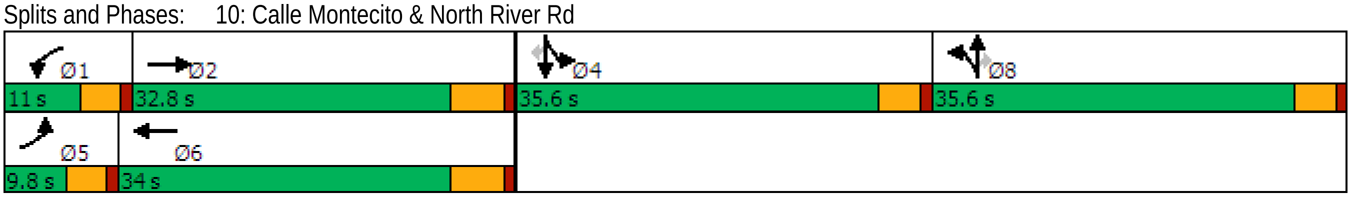
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	11.2	24.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	755	-	-	963	-	-	243
HCM Lane V/C Ratio	0.161	0.032	-	-	0.029	-	-	0.246
HCM Control Delay (s)	11.2	9.9	-	-	8.9	-	-	24.6
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0.9

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	49	588	32	695	1	8	1	105
Future Volume (vph)	49	588	32	695	1	8	1	105
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.7	29.5	6.6	28.0	9.8	9.8	15.6	15.6
Actuated g/C Ratio	0.07	0.38	0.09	0.36	0.13	0.13	0.20	0.20
v/c Ratio	0.41	0.49	0.23	0.68	0.06	0.03	0.59	0.28
Control Delay	51.4	23.9	44.4	27.2	31.9	0.1	36.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	23.9	44.4	27.2	31.9	0.1	36.8	8.5
LOS	D	C	D	C	C	A	D	A
Approach Delay		25.9		27.9	18.9		27.0	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 76.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	588	27	32	695	98	11	1	8	196	1	105
Future Volume (veh/h)	49	588	27	32	695	98	11	1	8	196	1	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	639	29	35	755	107	12	1	9	213	1	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1135	51	67	985	140	180	15	173	307	1	275
Arrive On Green	0.05	0.33	0.33	0.04	0.32	0.32	0.11	0.11	0.11	0.17	0.17	0.17
Sat Flow, veh/h	1781	3462	157	1781	3125	443	1650	138	1585	1773	8	1585
Grp Volume(v), veh/h	53	328	340	35	429	433	13	0	9	214	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1791	1788	0	1585	1782	0	1585
Q Serve(g_s), s	1.6	8.4	8.4	1.1	12.0	12.0	0.4	0.0	0.3	6.2	0.0	3.5
Cycle Q Clear(g_c), s	1.6	8.4	8.4	1.1	12.0	12.0	0.4	0.0	0.3	6.2	0.0	3.5
Prop In Lane	1.00		0.09	1.00		0.25	0.92		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	583	604	67	560	564	195	0	173	309	0	275
V/C Ratio(X)	0.59	0.56	0.56	0.52	0.77	0.77	0.07	0.00	0.05	0.69	0.00	0.42
Avail Cap(c_a), veh/h	171	874	906	210	913	920	1006	0	892	1003	0	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	15.3	15.3	26.0	17.0	17.0	22.0	0.0	22.0	21.4	0.0	20.3
Incr Delay (d2), s/veh	6.0	0.9	0.8	6.2	2.2	2.2	0.1	0.0	0.1	2.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.1	3.2	0.5	4.7	4.7	0.1	0.0	0.1	2.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	16.1	16.1	32.2	19.3	19.3	22.2	0.0	22.1	24.2	0.0	21.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		721			897			22			328	
Approach Delay, s/veh		17.2			19.8			22.1			23.2	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	23.8		14.1	7.3	23.1		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0				
Max Q Clear Time (g_c+I1), s	3.1	10.4		8.2	3.6	14.0		2.4				
Green Ext Time (p_c), s	0.0	2.6		1.3	0.0	3.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			19.4									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	43	767	775	1	0	83	0	
Future Volume (vph)	43	767	775	1	0	83	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.5	26.5	20.6		12.9	11.7	11.7	
Actuated g/C Ratio	0.14	0.50	0.39		0.25	0.22	0.22	
v/c Ratio	0.19	0.47	0.65		0.00	0.29	0.25	
Control Delay	30.7	9.3	17.1		0.0	22.5	1.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	30.7	9.3	17.1		0.0	22.5	1.7	
LOS	C	A	B		A	C	A	
Approach Delay		10.5	17.1				10.4	
Approach LOS		B	B				B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 52.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	767	0	0	775	52	1	0	1	83	0	115
Future Volume (veh/h)	43	767	0	0	775	52	1	0	1	83	0	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	834	0	0	842	57	1	0	1	90	0	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1898	0	5	1244	84	194	38	95	426	0	242
Arrive On Green	0.05	0.53	0.00	0.00	0.37	0.37	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3377	229	370	250	620	1416	0	1585
Grp Volume(v), veh/h	47	834	0	0	443	456	2	0	0	90	0	125
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1240	0	0	1416	0	1585
Q Serve(g_s), s	1.0	5.6	0.0	0.0	8.2	8.2	0.0	0.0	0.0	0.0	0.0	2.8
Cycle Q Clear(g_c), s	1.0	5.6	0.0	0.0	8.2	8.2	2.9	0.0	0.0	1.8	0.0	2.8
Prop In Lane	1.00		0.00	1.00		0.12	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	91	1898	0	5	655	674	327	0	0	426	0	242
V/C Ratio(X)	0.52	0.44	0.00	0.00	0.68	0.68	0.01	0.00	0.00	0.21	0.00	0.52
Avail Cap(c_a), veh/h	340	4261	0	249	2040	2100	1244	0	0	1313	0	1235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	5.6	0.0	0.0	10.4	10.4	14.1	0.0	0.0	14.8	0.0	15.3
Incr Delay (d2), s/veh	4.5	0.2	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.2	0.0	0.0	2.6	2.7	0.0	0.0	0.0	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	5.7	0.0	0.0	11.7	11.6	14.1	0.0	0.0	15.1	0.0	17.0
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		881			899			2			215	
Approach Delay, s/veh		6.6			11.6			14.1			16.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	27.7		11.6	6.5	21.2		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32
Max Q Clear Time (g_c+I1), s	0.0	7.6		4.8	3.0	10.2		4.9
Green Ext Time (p_c), s	0.0	4.6		0.9	0.0	4.2		0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

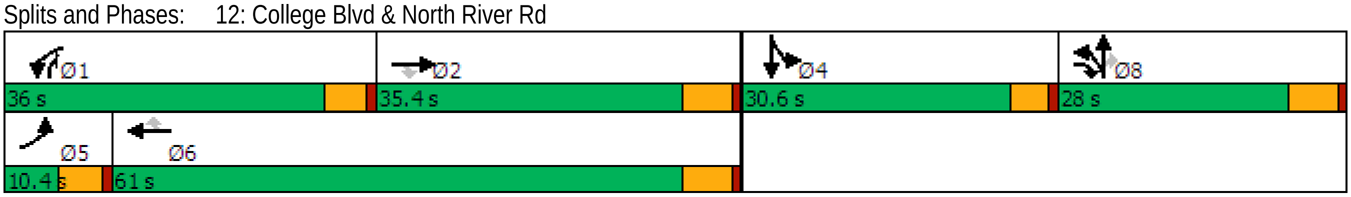
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	232	619	949	484	70	21	933	25	49
Future Volume (vph)	14	232	619	949	484	70	21	933	25	49
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	10.4	35.4	28.0	36.0	61.0	61.0	28.0	36.0	30.6	30.6
Total Split (%)	8.0%	27.2%	21.5%	27.7%	46.9%	46.9%	21.5%	27.7%	23.5%	23.5%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	14.4	38.6	31.7	49.7	49.7	22.8	60.4	10.6	10.6
Actuated g/C Ratio	0.05	0.15	0.39	0.32	0.50	0.50	0.23	0.61	0.11	0.11
v/c Ratio	0.15	0.49	0.79	0.94	0.30	0.09	0.91	0.48	0.14	0.31
Control Delay	55.3	42.8	14.2	50.4	16.8	2.0	66.8	2.0	42.9	42.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	42.8	14.2	50.4	16.8	2.0	66.8	2.0	42.9	42.2
LOS	E	D	B	D	B	A	E	A	D	D
Approach Delay		22.5			37.3		19.5			42.4
Approach LOS		C			D		B			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 98.7	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	232	619	949	484	70	322	21	933	25	49	9
Future Volume (veh/h)	14	232	619	949	484	70	322	21	933	25	49	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	252	673	1032	526	76	350	23	1014	27	53	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	959	749	974	1901	848	339	22	1351	92	79	15
Arrive On Green	0.02	0.27	0.27	0.28	0.53	0.53	0.20	0.20	0.20	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1676	110	2790	1781	1530	289
Grp Volume(v), veh/h	15	252	673	1032	526	76	373	0	1014	27	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1818
Q Serve(g_s), s	0.9	6.1	29.6	30.9	8.9	2.6	22.2	0.0	22.2	1.6	0.0	3.7
Cycle Q Clear(g_c), s	0.9	6.1	29.6	30.9	8.9	2.6	22.2	0.0	22.2	1.6	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	30	959	749	974	1901	848	362	0	1351	92	0	94
V/C Ratio(X)	0.50	0.26	0.90	1.06	0.28	0.09	1.03	0.00	0.75	0.29	0.00	0.67
Avail Cap(c_a), veh/h	86	959	749	974	1901	848	362	0	1351	422	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.5	31.5	23.1	39.4	13.9	12.5	43.7	0.0	22.9	50.1	0.0	51.1
Incr Delay (d2), s/veh	12.5	0.1	13.8	46.0	0.1	0.0	55.6	0.0	2.4	1.8	0.0	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	21.4	19.1	3.5	0.9	15.3	0.0	10.7	0.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	31.6	36.9	85.4	14.0	12.5	99.3	0.0	25.3	51.8	0.0	59.1
LnGrp LOS	E	C	D	F	B	B	F	A	C	D	A	E
Approach Vol, veh/h		940			1634			1387			90	
Approach Delay, s/veh		35.9			59.0			45.2			56.9	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	35.4		10.3	6.9	64.5		28.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	30.9	29.6		26.0	5.3	55.2		22.2				
Max Q Clear Time (g_c+I1), s	32.9	31.6		5.7	2.9	10.9		24.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			48.9									
HCM 6th LOS			D									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	27	26	1225	1528	74
Future Volume (vph)	50	27	26	1225	1528	74
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.4	6.3	56.4	50.1	50.1
Actuated g/C Ratio	0.16	0.24	0.09	0.81	0.72	0.72
v/c Ratio	0.19	0.08	0.09	0.47	0.65	0.07
Control Delay	27.0	14.9	34.5	6.0	14.4	6.4
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.0	14.9	34.5	6.1	14.4	6.4
LOS	C	B	C	A	B	A
Approach Delay	22.7			6.7	14.1	
Approach LOS	C			A	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 69.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	27	26	1225	1528	74
Future Volume (veh/h)	50	27	26	1225	1528	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	29	28	1332	1661	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	186	225	131	2516	2054	916
Arrive On Green	0.10	0.10	0.04	0.71	0.58	0.58
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	54	29	28	1332	1661	80
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.6	0.9	0.4	9.7	20.5	1.2
Cycle Q Clear(g_c), s	1.6	0.9	0.4	9.7	20.5	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	186	225	131	2516	2054	916
V/C Ratio(X)	0.29	0.13	0.21	0.53	0.81	0.09
Avail Cap(c_a), veh/h	901	862	399	3312	2574	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	20.8	25.8	3.8	9.3	5.2
Incr Delay (d2), s/veh	0.9	0.3	0.8	0.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.2	1.8	6.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.8	21.0	26.6	3.9	10.9	5.2
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	83			1360	1741	
Approach Delay, s/veh	22.8			4.4	10.6	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.0		10.4	7.2	37.8
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		11.7		3.6	2.4	22.5
Green Ext Time (p_c), s		8.9		0.3	0.0	9.5

Intersection Summary		
HCM 6th Ctrl Delay		8.3
HCM 6th LOS		A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	175	12	76	17	40	20	1027	16	1336	206
Future Volume (vph)	175	12	76	17	40	20	1027	16	1336	206
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	43.2	10.1	43.2	43.2
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	11.2%	48.0%	11.2%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.4	16.4		16.4	16.4	5.2	39.0	5.2	37.2	37.2
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.08	0.58	0.08	0.55	0.55
v/c Ratio	0.61	0.23		0.32	0.09	0.16	0.39	0.13	0.75	0.25
Control Delay	32.2	7.7		24.5	0.4	38.9	10.3	38.4	18.3	8.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	7.7		24.5	0.4	38.9	10.3	38.4	18.3	8.3
LOS	C	A		C	A	D	B	D	B	A
Approach Delay		23.3		17.3			10.8		17.2	
Approach LOS		C		B			B		B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 67.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 62.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	12	87	76	17	40	20	1027	29	16	1336	206
Future Volume (veh/h)	175	12	87	76	17	40	20	1027	29	16	1336	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	13	95	83	18	43	22	1116	32	17	1452	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	55	401	351	67	447	44	2443	70	36	1685	752
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.48	0.48	0.02	0.47	0.47
Sat Flow, veh/h	1341	194	1420	916	239	1585	1781	5102	146	1781	3554	1585
Grp Volume(v), veh/h	190	0	108	101	0	43	22	744	404	17	1452	224
Grp Sat Flow(s),veh/h/ln	1341	0	1615	1155	0	1585	1781	1702	1844	1781	1777	1585
Q Serve(g_s), s	9.7	0.0	3.7	3.7	0.0	1.4	0.9	10.4	10.4	0.7	25.9	6.2
Cycle Q Clear(g_c), s	17.1	0.0	3.7	7.4	0.0	1.4	0.9	10.4	10.4	0.7	25.9	6.2
Prop In Lane	1.00		0.88	0.82		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	456	418	0	447	44	1630	883	36	1685	752
V/C Ratio(X)	0.56	0.00	0.24	0.24	0.00	0.10	0.50	0.46	0.46	0.48	0.86	0.30
Avail Cap(c_a), veh/h	563	0	725	645	0	711	125	1785	967	125	1864	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	19.7	21.9	0.0	18.9	34.3	12.4	12.4	34.6	16.7	11.5
Incr Delay (d2), s/veh	1.4	0.0	0.3	0.3	0.0	0.1	8.4	0.2	0.4	9.5	4.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	1.3	1.4	0.0	0.5	0.5	3.6	3.9	0.4	10.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	19.9	22.2	0.0	19.0	42.8	12.6	12.8	44.1	20.8	11.7
LnGrp LOS	C	A	B	C	A	B	D	B	B	D	C	B
Approach Vol, veh/h		298			144			1170			1693	
Approach Delay, s/veh		26.0			21.2			13.2			19.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	39.9		24.8	6.9	39.6		24.8
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7
Max Green Setting (Gmax), s	5.0	37.4		* 32	5.0	37.4		* 32
Max Q Clear Time (g_c+I1), s	2.7	12.4		19.1	2.9	27.9		9.4
Green Ext Time (p_c), s	0.0	5.8		1.0	0.0	5.9		0.5

Intersection Summary			
HCM 6th Ctrl Delay			18.1
HCM 6th LOS			B

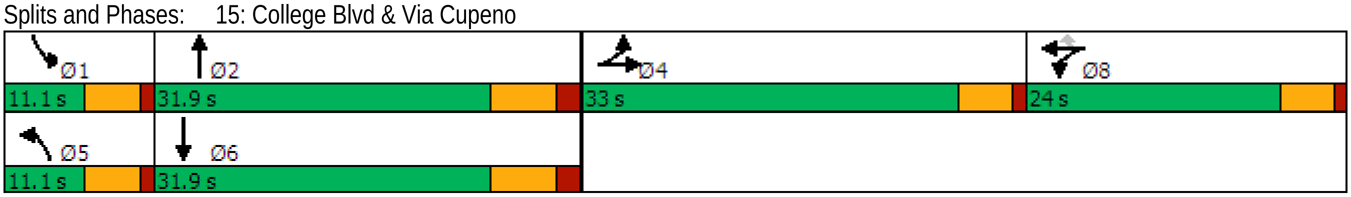
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1	5	1	132	1027	1	1425
Future Volume (vph)	1	5	1	132	1027	1	1425
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	11.1	31.9	11.1	31.9
Total Split (%)	33.0%	24.0%	24.0%	11.1%	31.9%	11.1%	31.9%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	11.7	11.7	6.2	35.9	6.2	26.0
Actuated g/C Ratio	0.15	0.16	0.16	0.08	0.48	0.08	0.35
v/c Ratio	0.18	0.54	0.00	0.50	0.47	0.01	0.91
Control Delay	19.3	38.6	0.0	43.5	18.2	39.0	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	38.6	0.0	43.5	18.2	39.0	34.8
LOS	B	D	A	D	B	D	C
Approach Delay	19.3	38.3			21.0		34.8
Approach LOS	B	D			C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 74.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1	35	133	5	1	132	1027	37	1	1425	58
Future Volume (veh/h)	49	1	35	133	5	1	132	1027	37	1	1425	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	1	38	145	5	1	143	1116	40	1	1549	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	4	155	191	7	175	297	2268	81	3	1831	74
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.09	0.45	0.45	0.00	0.36	0.36
Sat Flow, veh/h	1781	41	1550	1725	59	1585	3456	5060	181	1781	5033	205
Grp Volume(v), veh/h	53	0	39	150	0	1	143	751	405	1	1048	564
Grp Sat Flow(s),veh/h/ln	1781	0	1591	1784	0	1585	1728	1702	1838	1781	1702	1834
Q Serve(g_s), s	1.8	0.0	1.5	5.3	0.0	0.0	2.5	10.1	10.1	0.0	18.2	18.2
Cycle Q Clear(g_c), s	1.8	0.0	1.5	5.3	0.0	0.0	2.5	10.1	10.1	0.0	18.2	18.2
Prop In Lane	1.00		0.97	0.97		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	178	0	159	197	0	175	297	1525	823	3	1239	667
V/C Ratio(X)	0.30	0.00	0.24	0.76	0.00	0.01	0.48	0.49	0.49	0.34	0.85	0.85
Avail Cap(c_a), veh/h	773	0	691	525	0	467	321	1525	823	166	1325	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	26.8	27.9	0.0	25.5	28.1	12.6	12.6	32.2	18.9	18.9
Incr Delay (d2), s/veh	0.9	0.0	0.8	5.9	0.0	0.0	1.2	0.2	0.5	57.1	5.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.6	2.5	0.0	0.0	1.1	3.4	3.8	0.1	7.3	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	27.6	33.8	0.0	25.5	29.3	12.9	13.1	89.2	23.8	27.7
LnGrp LOS	C	A	C	C	A	C	C	B	B	F	C	C
Approach Vol, veh/h		92			151			1299			1613	
Approach Delay, s/veh		27.7			33.7			14.7			25.2	
Approach LOS		C			C			B			C	

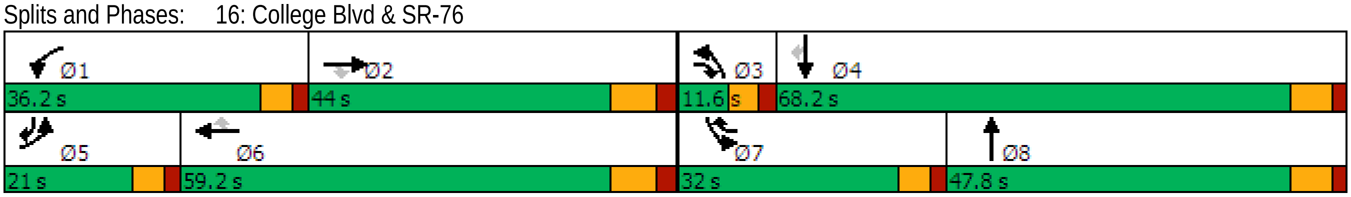
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	35.7		11.5	10.6	30.3		12.1				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	25.1		28.0	6.0	25.1		19.0				
Max Q Clear Time (g_c+I1), s	2.0	12.1		3.8	4.5	20.2		7.3				
Green Ext Time (p_c), s	0.0	4.6		0.3	0.1	3.2		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		21.4
HCM 6th LOS		C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	292	766	22	527	1370	453	48	458	510	751	327
Future Volume (vph)	292	766	22	527	1370	453	48	458	510	751	327
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	36.2	50.1	28.8	49.7	84.1	5.9	38.0	26.4	61.0	83.1
Actuated g/C Ratio	0.10	0.23	0.32	0.19	0.32	0.54	0.04	0.24	0.17	0.39	0.53
v/c Ratio	0.94	0.70	0.04	0.90	0.92	0.56	0.40	0.90	0.95	0.59	0.40
Control Delay	104.6	59.2	0.1	80.6	61.0	23.3	84.3	66.5	91.1	40.3	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.6	59.2	0.1	80.6	61.0	23.3	84.3	66.5	91.1	40.3	16.2
LOS	F	E	A	F	E	C	F	E	F	D	B
Approach Delay		70.2			58.1			67.6		51.6	
Approach LOS		E			E			E		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 155.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 59.9	Intersection LOS: E
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	766	22	527	1370	453	48	458	261	510	751	327
Future Volume (veh/h)	292	766	22	527	1370	453	48	458	261	510	751	327
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	317	833	24	573	1489	492	52	498	284	554	816	355
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	1207	414	627	1632	774	86	537	305	582	1384	773
Arrive On Green	0.10	0.24	0.24	0.18	0.32	0.32	0.02	0.25	0.25	0.17	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2183	1240	3456	3554	1585
Grp Volume(v), veh/h	317	833	24	573	1489	492	52	405	377	554	816	355
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1647	1728	1777	1585
Q Serve(g_s), s	14.2	23.2	1.8	25.4	43.7	36.0	2.3	34.7	34.9	24.8	28.4	23.1
Cycle Q Clear(g_c), s	14.2	23.2	1.8	25.4	43.7	36.0	2.3	34.7	34.9	24.8	28.4	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	339	1207	414	627	1632	774	86	437	405	582	1384	773
V/C Ratio(X)	0.94	0.69	0.06	0.91	0.91	0.64	0.60	0.93	0.93	0.95	0.59	0.46
Avail Cap(c_a), veh/h	339	1207	414	675	1675	787	131	467	433	582	1398	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.9	54.4	43.2	62.7	51.0	29.6	75.3	57.5	57.6	64.2	37.7	26.4
Incr Delay (d2), s/veh	32.7	1.7	0.1	16.4	7.9	1.7	6.7	23.9	26.1	25.7	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	10.2	0.7	12.6	19.8	14.1	1.1	18.5	17.5	13.0	12.6	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.6	56.1	43.3	79.1	58.9	31.3	82.0	81.4	83.6	89.9	38.4	26.8
LnGrp LOS	F	E	D	E	E	C	F	F	F	F	D	C
Approach Vol, veh/h		1174			2554			834			1725	
Approach Delay, s/veh		68.3			58.1			82.4			52.6	
Approach LOS		E			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	44.9	9.6	67.6	21.0	57.9	32.0	45.2
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	27.4	25.2	4.3	30.4	16.2	45.7	26.8	36.9
Green Ext Time (p_c), s	0.9	3.3	0.0	6.6	0.0	4.2	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

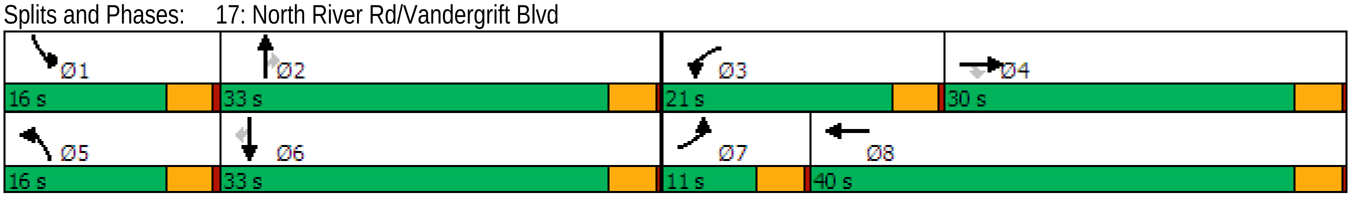
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	56	109	413	51	116	817	207	92	703	38
Future Volume (vph)	47	56	109	413	51	116	817	207	92	703	38
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	10.5	10.5	15.0	21.0	10.2	33.3	33.3	9.5	29.8	29.8
Actuated g/C Ratio	0.08	0.13	0.13	0.19	0.26	0.13	0.42	0.42	0.12	0.38	0.38
v/c Ratio	0.34	0.25	0.35	0.69	0.50	0.55	0.42	0.28	0.47	0.57	0.06
Control Delay	45.5	34.2	6.8	38.2	8.9	45.5	20.8	4.7	43.9	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	34.2	6.8	38.2	8.9	45.5	20.8	4.7	43.9	24.6	0.2
LOS	D	C	A	D	A	D	C	A	D	C	A
Approach Delay		22.7			26.3		20.4			25.6	
Approach LOS		C			C		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 79.4	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	56	109	413	51	233	116	817	207	92	703	38
Future Volume (veh/h)	47	56	109	413	51	233	116	817	207	92	703	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	61	118	449	55	253	126	888	225	100	764	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	212	180	572	68	313	162	2166	672	130	1444	644
Arrive On Green	0.04	0.11	0.11	0.17	0.23	0.23	0.09	0.42	0.42	0.07	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	3456	291	1338	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	51	61	118	449	0	308	126	888	225	100	764	41
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1629	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	2.0	2.1	5.1	8.9	0.0	12.7	4.9	8.7	6.8	3.9	11.6	1.1
Cycle Q Clear(g_c), s	2.0	2.1	5.1	8.9	0.0	12.7	4.9	8.7	6.8	3.9	11.6	1.1
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	212	180	572	0	381	162	2166	672	130	1444	644
V/C Ratio(X)	0.64	0.29	0.66	0.79	0.00	0.81	0.78	0.41	0.33	0.77	0.53	0.06
Avail Cap(c_a), veh/h	175	681	577	823	0	822	300	2166	672	300	1444	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	29.0	30.3	28.6	0.0	25.8	31.7	14.3	13.8	32.5	16.0	12.9
Incr Delay (d2), s/veh	8.4	0.7	4.0	3.2	0.0	4.1	7.9	0.6	1.3	9.2	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0	2.1	3.8	0.0	5.1	2.4	3.2	2.5	2.0	4.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	29.7	34.4	31.8	0.0	29.9	39.6	14.9	15.1	41.7	17.4	13.1
LnGrp LOS	D	C	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		230			757			1239			905	
Approach Delay, s/veh		34.8			31.0			17.5			19.9	
Approach LOS		C			C			B			B	

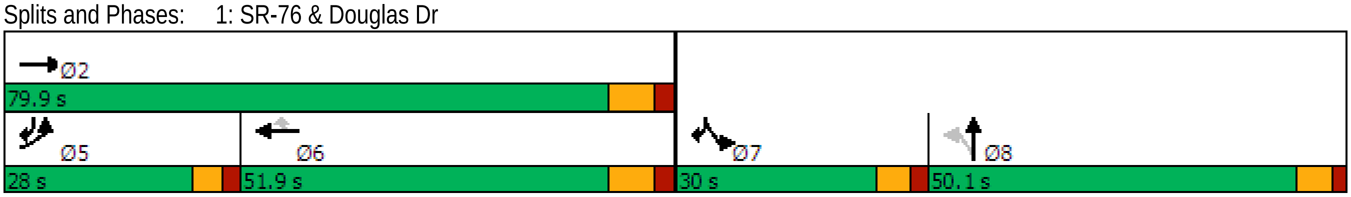
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	34.3	15.8	12.1	10.5	33.0	7.2	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	5.9	10.7	10.9	7.1	6.9	13.6	4.0	14.7
Green Ext Time (p_c), s	0.1	6.9	0.9	0.6	0.1	4.9	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	538	1617	1034	254	288	361	
Future Volume (vph)	538	1617	1034	254	288	361	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	79.9	51.9	51.9	30.0		50.1
Total Split (%)	17.5%	49.9%	32.4%	32.4%	18.8%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	71.9	43.9	43.9	23.9	52.3	
Actuated g/C Ratio	0.20	0.65	0.40	0.40	0.22	0.48	
v/c Ratio	0.84	0.76	0.80	0.35	0.82	0.26	
Control Delay	54.3	15.8	34.2	3.9	59.0	2.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.3	15.8	34.2	3.9	59.0	2.1	
LOS	D	B	C	A	E	A	
Approach Delay		25.4	28.2				
Approach LOS		C	C				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	1617	0	0	1034	254	0	0	0	288	0	361
Future Volume (veh/h)	538	1617	0	0	1034	254	0	0	0	288	0	361
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	585	1758	0	0	1124	276	0	0	0	313	0	392
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	694	2292	0	0	1356	605	0	2	0	356	0	0
Arrive On Green	0.20	0.64	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.20	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	313	
Grp Volume(v), veh/h	585	1758	0	0	1124	276	0	0	0	313	49.3	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	D	
Q Serve(g_s), s	14.8	31.6	0.0	0.0	26.0	11.9	0.0	0.0	0.0	15.5		
Cycle Q Clear(g_c), s	14.8	31.6	0.0	0.0	26.0	11.9	0.0	0.0	0.0	15.5		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	694	2292	0	0	1356	605	0	2	0	356		
V/C Ratio(X)	0.84	0.77	0.00	0.00	0.83	0.46	0.00	0.00	0.00	0.88		
Avail Cap(c_a), veh/h	848	2810	0	0	1716	765	0	905	0	468		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	35.0	11.3	0.0	0.0	25.4	21.1	0.0	0.0	0.0	35.3		
Incr Delay (d2), s/veh	6.6	1.1	0.0	0.0	2.9	0.5	0.0	0.0	0.0	14.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.7	10.9	0.0	0.0	11.0	4.3	0.0	0.0	0.0	8.0		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	12.4	0.0	0.0	28.3	21.6	0.0	0.0	0.0	49.3		
LnGrp LOS	D	B	A	A	C	C	A	A	A	D		
Approach Vol, veh/h		2343			1400			0				
Approach Delay, s/veh		19.7			27.0			0.0				
Approach LOS		B			C							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		66.6			23.9	42.7	24.3	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		71.9			* 22	43.9	23.9	44.0				
Max Q Clear Time (g_c+I1), s		33.6			16.8	28.0	17.5	0.0				
Green Ext Time (p_c), s		14.1			1.4	6.7	0.7	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			24.5
HCM 6th LOS			C

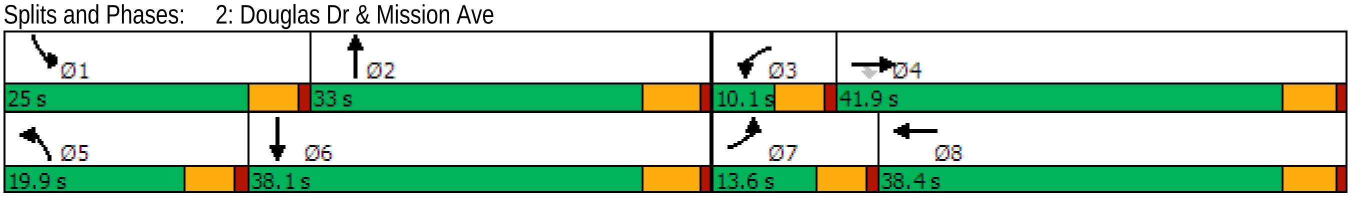
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	231	609	148	60	332	165	593	302	485
Future Volume (vph)	231	609	148	60	332	165	593	302	485
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.6	41.9	41.9	10.1	38.4	19.9	33.0	25.0	38.1
Total Split (%)	12.4%	38.1%	38.1%	9.2%	34.9%	18.1%	30.0%	22.7%	34.6%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	26.0	26.0	5.1	22.5	13.4	22.6	20.2	29.4
Actuated g/C Ratio	0.09	0.27	0.27	0.05	0.24	0.14	0.24	0.21	0.31
v/c Ratio	0.81	0.69	0.30	0.70	0.80	0.72	0.80	0.88	0.54
Control Delay	66.1	35.2	7.0	84.9	28.9	59.0	43.1	64.4	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	35.2	7.0	84.9	28.9	59.0	43.1	64.4	30.2
LOS	E	D	A	F	C	E	D	E	C
Approach Delay		38.2			33.2		46.4		42.6
Approach LOS		D			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 95.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 40.0	Intersection LOS: D
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	609	148	60	332	383	165	593	23	302	485	48
Future Volume (veh/h)	231	609	148	60	332	383	165	593	23	302	485	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	662	161	65	361	416	179	645	25	328	527	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	1166	520	83	516	461	213	751	29	352	957	94
Arrive On Green	0.08	0.33	0.33	0.05	0.29	0.29	0.12	0.22	0.22	0.20	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3488	135	1781	3268	322
Grp Volume(v), veh/h	251	662	161	65	361	416	179	328	342	328	286	293
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1846	1781	1777	1812
Q Serve(g_s), s	7.2	15.5	7.7	3.6	18.2	25.4	9.9	17.9	18.0	18.3	13.7	13.7
Cycle Q Clear(g_c), s	7.2	15.5	7.7	3.6	18.2	25.4	9.9	17.9	18.0	18.3	13.7	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.18
Lane Grp Cap(c), veh/h	291	1166	520	83	516	461	213	383	397	352	521	531
V/C Ratio(X)	0.86	0.57	0.31	0.78	0.70	0.90	0.84	0.86	0.86	0.93	0.55	0.55
Avail Cap(c_a), veh/h	291	1287	574	88	582	519	262	480	498	352	570	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	28.0	25.3	47.5	31.8	34.4	43.4	38.1	38.1	39.8	30.0	30.0
Incr Delay (d2), s/veh	22.1	0.5	0.3	33.2	3.2	17.8	17.8	12.1	11.8	31.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	6.6	2.9	2.4	8.1	11.9	5.4	9.0	9.3	10.9	5.9	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	28.4	25.7	80.8	35.0	52.2	61.2	50.2	49.9	71.0	30.9	31.0
LnGrp LOS	E	C	C	F	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1074			842			849			907	
Approach Delay, s/veh		37.2			47.1			52.4			45.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	27.5	9.8	38.5	17.2	35.3	13.6	34.7
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	19.9	27.2	5.0	36.5	14.8	32.3	8.5	33.0
Max Q Clear Time (g_c+I1), s	20.3	20.0	5.6	17.5	11.9	15.7	9.2	27.4
Green Ext Time (p_c), s	0.0	1.7	0.0	3.8	0.2	2.2	0.0	1.8

Intersection Summary			
HCM 6th Ctrl Delay			45.0
HCM 6th LOS			D

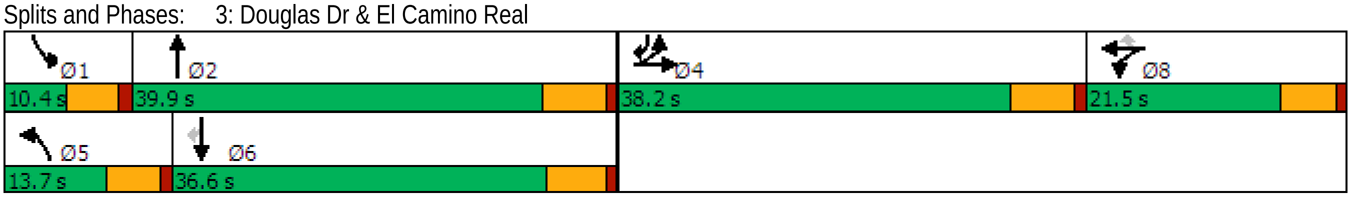
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1024	63	55	25	10	79	1020	7	703	623
Future Volume (vph)	1024	63	55	25	10	79	1020	7	703	623
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	38.2	38.2		21.5	21.5	13.7	39.9	10.4	36.6	38.2
Total Split (%)	34.7%	34.7%		19.5%	19.5%	12.5%	36.3%	9.5%	33.3%	34.7%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	32.4	32.4	97.9	10.1	10.1	8.0	38.3	5.1	29.9	70.0
Actuated g/C Ratio	0.33	0.33	1.00	0.10	0.10	0.08	0.39	0.05	0.31	0.72
v/c Ratio	0.98	0.11	0.04	0.46	0.04	0.60	0.86	0.09	0.71	0.34
Control Delay	56.9	27.0	0.0	51.6	0.2	64.7	36.2	50.9	36.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	27.0	0.0	51.6	0.2	64.7	36.2	50.9	36.5	8.3
LOS	E	C	A	D	A	E	D	D	D	A
Approach Delay		52.6		45.7			38.1		23.4	
Approach LOS		D		D			D		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 97.9	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1024	63	55	53	25	10	79	1020	63	7	703	623
Future Volume (veh/h)	1024	63	55	53	25	10	79	1020	63	7	703	623
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1113	68	0	58	27	11	86	1109	68	8	764	677
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1159	627		78	37	101	110	1179	72	18	1048	1758
Arrive On Green	0.34	0.34	0.00	0.06	0.06	0.06	0.06	0.35	0.35	0.01	0.29	0.29
Sat Flow, veh/h	3456	1870	1585	1234	575	1585	1781	3401	208	1781	3554	2790
Grp Volume(v), veh/h	1113	68	0	85	0	11	86	579	598	8	764	677
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1833	1781	1777	1395
Q Serve(g_s), s	30.1	2.4	0.0	4.4	0.0	0.6	4.5	30.1	30.2	0.4	18.4	11.3
Cycle Q Clear(g_c), s	30.1	2.4	0.0	4.4	0.0	0.6	4.5	30.1	30.2	0.4	18.4	11.3
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	1159	627		115	0	101	110	616	635	18	1048	1758
V/C Ratio(X)	0.96	0.11		0.74	0.00	0.11	0.78	0.94	0.94	0.45	0.73	0.39
Avail Cap(c_a), veh/h	1159	627		303	0	266	155	628	648	93	1140	1831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	21.9	0.0	43.9	0.0	42.1	44.1	30.2	30.2	47.0	30.2	8.6
Incr Delay (d2), s/veh	17.7	0.1	0.0	8.9	0.0	0.5	15.2	22.1	21.8	16.6	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	1.1	0.0	2.2	0.0	0.3	2.5	16.2	16.7	0.3	8.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	21.9	0.0	52.8	0.0	42.6	59.3	52.3	52.0	63.6	32.4	8.7
LnGrp LOS	D	C		D	A	D	E	D	D	E	C	A
Approach Vol, veh/h		1181	A		96			1263			1449	
Approach Delay, s/veh		47.2			51.6			52.7			21.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	39.3		38.2	11.3	34.3		11.6
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	33.7		32.0	8.3	* 31		16.0
Max Q Clear Time (g_c+I1), s	2.4	32.2		32.1	6.5	20.4		6.4
Green Ext Time (p_c), s	0.0	0.9		0.0	0.0	5.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

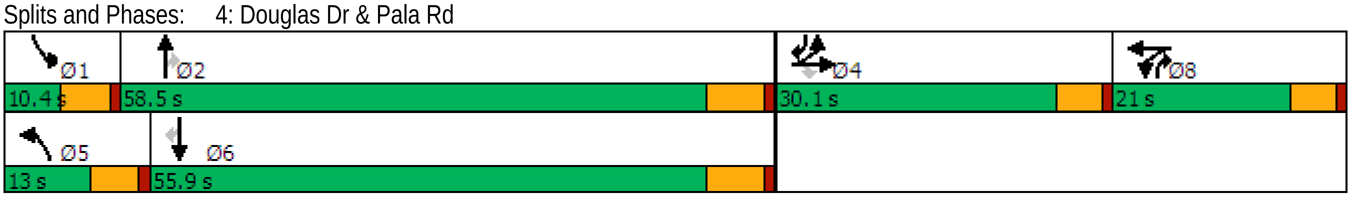
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	1	89	7	3	90	1859	17	21	1236	100
Future Volume (vph)	94	1	89	7	3	90	1859	17	21	1236	100
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	13.0	58.5	21.0	10.4	55.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.8%	48.8%	17.5%	8.7%	46.6%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.5	10.5	10.5	6.6	6.6	7.8	54.6	60.4	5.2	44.7	61.6
Actuated g/C Ratio	0.12	0.12	0.12	0.08	0.08	0.09	0.63	0.70	0.06	0.52	0.71
v/c Ratio	0.27	0.24	0.32	0.06	0.20	0.61	0.91	0.02	0.22	0.74	0.09
Control Delay	39.8	39.3	6.4	45.7	22.9	60.5	25.6	0.0	51.2	21.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	39.3	6.4	45.7	22.9	60.5	25.6	0.0	51.2	21.6	1.1
LOS	D	D	A	D	C	E	C	A	D	C	A
Approach Delay		23.5			27.8		27.0			20.5	
Approach LOS		C			C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	89	7	3	24	90	1859	17	21	1236	100
Future Volume (veh/h)	94	1	89	7	3	24	90	1859	17	21	1236	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	0	97	8	3	26	98	2021	18	23	1343	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	0	143	73	7	59	125	2111	1006	44	1949	1012
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.07	0.59	0.59	0.02	0.55	0.55
Sat Flow, veh/h	3563	0	1585	1781	167	1444	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	103	0	97	8	0	29	98	2021	18	23	1343	109
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1610	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.4	0.0	5.2	0.4	0.0	1.5	4.7	46.6	0.4	1.1	23.9	2.3
Cycle Q Clear(g_c), s	2.4	0.0	5.2	0.4	0.0	1.5	4.7	46.6	0.4	1.1	23.9	2.3
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	0	143	73	0	66	125	2111	1006	44	1949	1012
V/C Ratio(X)	0.32	0.00	0.68	0.11	0.00	0.44	0.78	0.96	0.02	0.53	0.69	0.11
Avail Cap(c_a), veh/h	1023	0	455	325	0	294	156	2135	1017	102	2029	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	38.4	40.2	0.0	40.8	39.8	16.6	5.9	42.0	14.3	6.1
Incr Delay (d2), s/veh	0.6	0.0	5.5	0.7	0.0	4.6	18.5	11.1	0.0	9.5	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.2	0.2	0.0	0.7	2.7	19.5	0.1	0.6	9.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	43.9	40.9	0.0	45.4	58.3	27.7	5.9	51.5	15.2	6.1
LnGrp LOS	D	A	D	D	A	D	E	C	A	D	B	A
Approach Vol, veh/h		200			37			2137			1475	
Approach Delay, s/veh		40.7			44.4			28.9			15.1	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	57.9		13.0	11.5	53.9		8.6				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	5.0	52.3		25.0	7.6	49.7		15.9				
Max Q Clear Time (g_c+I1), s	3.1	48.6		7.2	6.7	25.9		3.5				
Green Ext Time (p_c), s	0.0	3.1		0.8	0.0	8.6		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			24.4
HCM 6th LOS			C

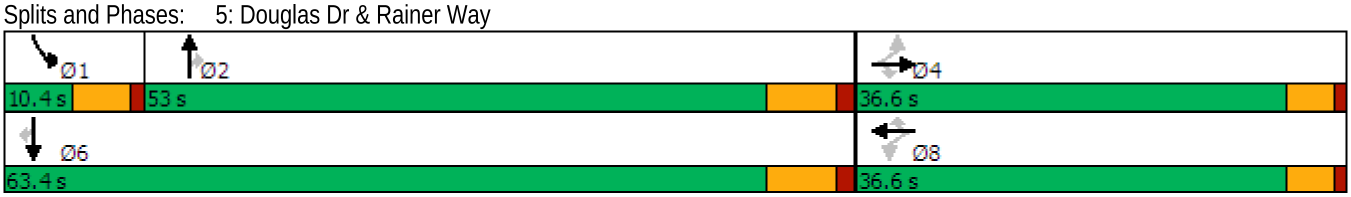
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	2	73	41	2	4	1793	80	4	1182	73
Future Volume (vph)	8	2	73	41	2	4	1793	80	4	1182	73
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		11.1	11.1		11.1	11.1	56.0	56.0	5.1	57.6	57.6
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.73	0.73	0.07	0.75	0.75
v/c Ratio		0.05	0.25		0.24	0.01	0.75	0.07	0.03	0.48	0.07
Control Delay		25.3	5.8		29.7	0.0	14.2	3.5	38.2	7.2	4.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.3	5.8		29.7	0.0	14.2	3.5	38.2	7.2	4.3
LOS		C	A		C	A	B	A	D	A	A
Approach Delay		8.2			27.4		13.7			7.1	
Approach LOS		A			C		B			A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	41	2	4	0	1793	80	4	1182	73
Future Volume (veh/h)	8	2	73	41	2	4	0	1793	80	4	1182	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	2	79	45	2	4	0	1949	87	4	1285	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	88	12	372	103	3	372	0	1983	884	9	2233	996
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.00	0.56	0.56	0.01	0.63	0.63
Sat Flow, veh/h	39	51	1585	73	12	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	11	0	79	47	0	4	0	1949	87	4	1285	79
Grp Sat Flow(s),veh/h/ln	90	0	1585	85	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	0.0	3.3	1.1	0.0	0.2	0.0	44.4	2.1	0.2	17.4	1.6
Cycle Q Clear(g_c), s	18.9	0.0	3.3	19.4	0.0	0.2	0.0	44.4	2.1	0.2	17.4	1.6
Prop In Lane	0.82		1.00	0.96		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	0	372	105	0	372	0	1983	884	9	2233	996
V/C Ratio(X)	0.11	0.00	0.21	0.45	0.00	0.01	0.00	0.98	0.10	0.43	0.58	0.08
Avail Cap(c_a), veh/h	325	0	614	309	0	614	0	1991	888	108	2439	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	25.5	40.3	0.0	24.3	0.0	17.9	8.5	41.0	8.9	6.0
Incr Delay (d2), s/veh	0.5	0.0	0.3	2.9	0.0	0.0	0.0	16.3	0.0	28.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.0	0.0	0.1	0.0	20.2	0.7	0.2	5.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	25.7	43.2	0.0	24.3	0.0	34.1	8.6	69.5	9.2	6.0
LnGrp LOS	C	A	C	D	A	C	A	C	A	E	A	A
Approach Vol, veh/h		90			51			2036			1368	
Approach Delay, s/veh		25.9			41.7			33.0			9.2	
Approach LOS		C			D			C			A	

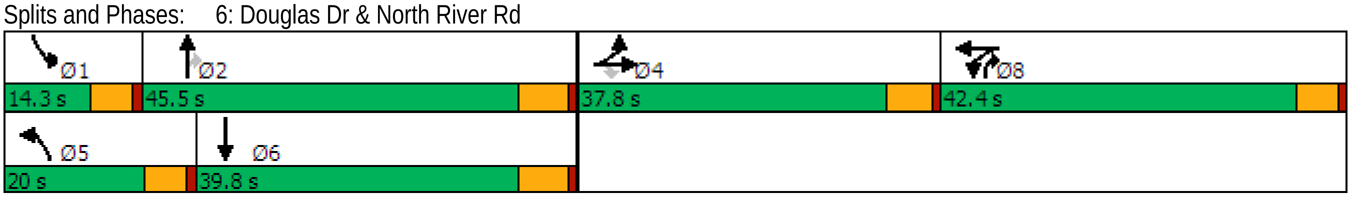
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.8	52.9		24.6		58.7		24.6				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.2	46.4		20.9		19.4		21.4				
Green Ext Time (p_c), s	0.0	0.0		0.2		8.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			23.8
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	38	96	67	567	65	146	667	893	39	571
Future Volume (vph)	38	96	67	567	65	146	667	893	39	571
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.0	45.5	42.4	14.3	39.8
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.3%	32.5%	30.3%	10.2%	28.4%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.1	13.1	13.1	33.5	33.5	14.1	38.4	74.2	7.7	29.2
Actuated g/C Ratio	0.12	0.12	0.12	0.30	0.30	0.12	0.34	0.65	0.07	0.26
v/c Ratio	0.20	0.25	0.23	0.65	0.44	0.72	0.60	0.45	0.35	0.74
Control Delay	49.2	48.3	1.7	44.2	34.9	70.0	36.5	1.1	64.3	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	48.3	1.7	44.2	34.9	70.0	36.5	1.1	64.3	45.3
LOS	D	D	A	D	C	E	D	A	E	D
Approach Delay		32.9			38.8		20.9			46.5
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 113.3	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	96	67	567	65	40	146	667	893	39	571	46
Future Volume (veh/h)	38	96	67	567	65	40	146	667	893	39	571	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	104	73	616	71	43	159	725	971	42	621	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	313	140	849	260	157	195	1371	1741	64	1040	84
Arrive On Green	0.09	0.09	0.09	0.24	0.24	0.24	0.11	0.39	0.39	0.04	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	3563	1091	661	1781	3554	2790	1781	3331	268
Grp Volume(v), veh/h	41	104	73	616	0	114	159	725	971	42	331	340
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1751	1781	1777	1395	1781	1777	1822
Q Serve(g_s), s	1.9	2.5	4.0	14.4	0.0	4.8	7.9	14.2	18.2	2.1	14.2	14.3
Cycle Q Clear(g_c), s	1.9	2.5	4.0	14.4	0.0	4.8	7.9	14.2	18.2	2.1	14.2	14.3
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	157	313	140	849	0	417	195	1371	1741	64	555	569
V/C Ratio(X)	0.26	0.33	0.52	0.73	0.00	0.27	0.81	0.53	0.56	0.65	0.60	0.60
Avail Cap(c_a), veh/h	630	1256	560	1456	0	716	287	1543	1876	175	660	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	38.8	39.5	31.7	0.0	28.1	39.4	21.5	9.8	43.1	26.3	26.3
Incr Delay (d2), s/veh	1.2	0.9	4.3	1.7	0.0	0.5	10.7	0.7	0.6	10.7	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.1	1.7	6.3	0.0	2.0	4.0	5.8	9.5	1.1	6.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	39.7	43.7	33.4	0.0	28.6	50.1	22.1	10.4	53.8	28.5	28.5
LnGrp LOS	D	D	D	C	A	C	D	C	B	D	C	C
Approach Vol, veh/h		218			730			1855			713	
Approach Delay, s/veh		41.0			32.7			18.4			30.0	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	41.1		13.8	15.3	34.5		27.0				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	8.9	39.3		32.0	14.6	33.6		37.0				
Max Q Clear Time (g_c+I1), s	4.1	20.2		6.0	9.9	16.3		16.4				
Green Ext Time (p_c), s	0.0	14.7		1.4	0.2	5.4		5.2				

Intersection Summary			
HCM 6th Ctrl Delay			25.1
HCM 6th LOS			C

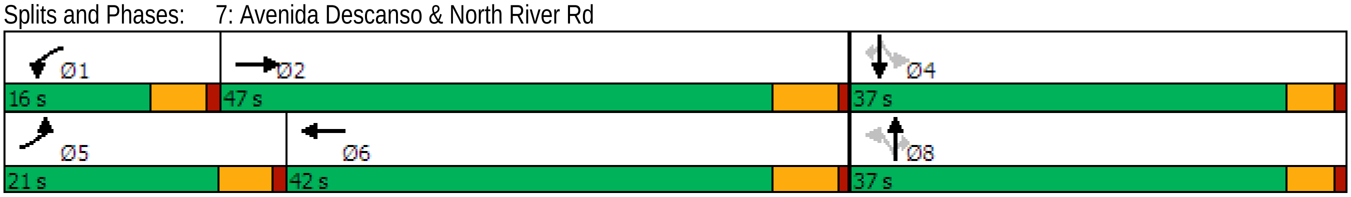
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	113	907	25	613	2	4	34	81	4	71
Future Volume (vph)	113	907	25	613	2	4	34	81	4	71
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	47.0	16.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	47.0%	16.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.6	28.1	7.4	20.2		12.1	12.1		12.1	12.1
Actuated g/C Ratio	0.19	0.50	0.13	0.36		0.21	0.21		0.21	0.21
v/c Ratio	0.37	0.57	0.12	0.60		0.02	0.09		0.32	0.19
Control Delay	29.5	13.6	32.1	18.9		21.0	0.4		24.6	6.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	29.5	13.6	32.1	18.9		21.0	0.4		24.6	6.2
LOS	C	B	C	B		C	A		C	A
Approach Delay		15.3		19.4		3.3			16.2	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 56.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 53.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	907	12	25	613	85	2	4	34	81	4	71
Future Volume (veh/h)	113	907	12	25	613	85	2	4	34	81	4	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	986	13	27	666	92	2	4	37	88	4	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1449	19	58	1068	147	172	229	249	389	14	249
Arrive On Green	0.10	0.40	0.40	0.03	0.34	0.34	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3591	47	1781	3137	433	290	1458	1585	1299	87	1585
Grp Volume(v), veh/h	123	488	511	27	377	381	6	0	37	92	0	77
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1792	1748	0	1585	1387	0	1585
Q Serve(g_s), s	2.6	8.6	8.6	0.6	6.8	6.8	0.0	0.0	0.8	2.2	0.0	1.6
Cycle Q Clear(g_c), s	2.6	8.6	8.6	0.6	6.8	6.8	0.1	0.0	0.8	2.3	0.0	1.6
Prop In Lane	1.00		0.03	1.00		0.24	0.33		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	170	717	751	58	605	611	401	0	249	403	0	249
V/C Ratio(X)	0.72	0.68	0.68	0.46	0.62	0.62	0.01	0.00	0.15	0.23	0.00	0.31
Avail Cap(c_a), veh/h	743	1920	2012	509	1687	1702	1537	0	1347	1360	0	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	9.4	9.4	18.1	10.5	10.5	13.6	0.0	13.9	14.5	0.0	14.2
Incr Delay (d2), s/veh	5.7	1.1	1.1	5.7	1.1	1.1	0.0	0.0	0.3	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.5	2.6	0.3	2.1	2.2	0.0	0.0	0.2	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	10.5	10.4	23.8	11.6	11.6	13.6	0.0	14.1	14.8	0.0	14.9
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1122			785			43			169	
Approach Delay, s/veh		11.8			12.0			14.1			14.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	21.2		10.6	8.7	18.8		10.6
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	10.9	41.2		32.4	15.9	36.2		32.4
Max Q Clear Time (g_c+I1), s	2.6	10.6		4.3	4.6	8.8		2.8
Green Ext Time (p_c), s	0.0	4.8		0.7	0.3	3.4		0.1

Intersection Summary			
HCM 6th Ctrl Delay			12.2
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1014	704	15	3	13
Future Vol, veh/h	21	1014	704	15	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	1102	765	16	3	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	781	0	-	0	1370	391
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	832	-	-	-	137	608
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	513	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	832	-	-	-	133	608
Mov Cap-2 Maneuver	-	-	-	-	133	-
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	832	-	-	-	364
HCM Lane V/C Ratio	0.027	-	-	-	0.048
HCM Control Delay (s)	9.4	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	873	112	112	660	12	48	0	48	19	0	8
Future Vol, veh/h	25	873	112	112	660	12	48	0	48	19	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	949	122	122	717	13	52	0	52	21	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	730	0	0	1071	0	0	1667	-	536	1497	2093	365
Stage 1	-	-	-	-	-	-	1064	-	-	968	968	-
Stage 2	-	-	-	-	-	-	603	-	-	529	1125	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	870	-	-	647	-	-	63	0	489	85	52	632
Stage 1	-	-	-	-	-	-	238	0	-	273	330	-
Stage 2	-	-	-	-	-	-	453	0	-	501	278	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	870	-	-	647	-	-	~ 52	-	489	63	41	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 52	-	-	63	41	-
Stage 1	-	-	-	-	-	-	231	-	-	265	268	-
Stage 2	-	-	-	-	-	-	363	-	-	434	269	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	13.2	67.2
HCM LOS			B	F

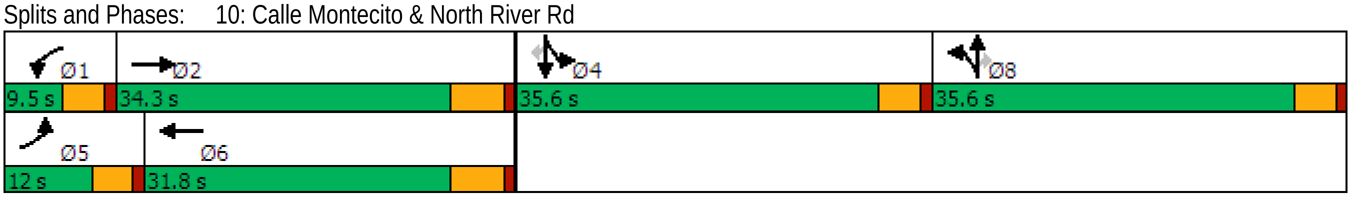
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	489	870	-	-	647	-	-	86
HCM Lane V/C Ratio	0.107	0.031	-	-	0.188	-	-	0.341
HCM Control Delay (s)	13.2	9.3	-	-	11.8	-	-	67.2
HCM Lane LOS	B	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.7	-	-	1.3

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	126	769	8	696	2	32	1	59
Future Volume (vph)	126	769	8	696	2	32	1	59
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.4	5.2	27.2	10.0	10.0	13.5	13.5
Actuated g/C Ratio	0.10	0.49	0.07	0.35	0.13	0.13	0.17	0.17
v/c Ratio	0.78	0.49	0.08	0.80	0.12	0.12	0.49	0.18
Control Delay	67.9	19.8	44.1	31.2	31.8	0.8	35.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	19.8	44.1	31.2	31.8	0.8	35.6	1.9
LOS	E	B	D	C	C	A	D	A
Approach Delay		26.5		31.4	14.3		25.4	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 78.7	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	769	10	8	696	183	23	2	32	135	1	59
Future Volume (veh/h)	126	769	10	8	696	183	23	2	32	135	1	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	836	11	9	757	199	25	2	35	147	1	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1521	20	21	938	246	171	14	164	226	2	202
Arrive On Green	0.10	0.42	0.42	0.01	0.34	0.34	0.10	0.10	0.10	0.13	0.13	0.13
Sat Flow, veh/h	1781	3591	47	1781	2784	732	1655	132	1585	1770	12	1585
Grp Volume(v), veh/h	137	414	433	9	483	473	27	0	35	148	0	64
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1739	1788	0	1585	1782	0	1585
Q Serve(g_s), s	4.4	10.2	10.2	0.3	14.4	14.4	0.8	0.0	1.2	4.6	0.0	2.1
Cycle Q Clear(g_c), s	4.4	10.2	10.2	0.3	14.4	14.4	0.8	0.0	1.2	4.6	0.0	2.1
Prop In Lane	1.00		0.03	1.00		0.42	0.93		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	175	752	788	21	599	586	185	0	164	227	0	202
V/C Ratio(X)	0.78	0.55	0.55	0.43	0.81	0.81	0.15	0.00	0.21	0.65	0.00	0.32
Avail Cap(c_a), veh/h	230	875	917	153	799	781	954	0	846	951	0	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	12.6	12.6	28.5	17.5	17.5	23.7	0.0	23.9	24.1	0.0	23.0
Incr Delay (d2), s/veh	12.1	0.6	0.6	13.7	4.6	4.7	0.4	0.0	0.6	3.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.6	3.8	0.2	6.0	5.8	0.3	0.0	0.4	2.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	13.2	13.2	42.2	22.1	22.2	24.1	0.0	24.5	27.2	0.0	23.9
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		984			965			62			212	
Approach Delay, s/veh		16.6			22.3			24.3			26.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	30.3		12.0	10.2	25.3		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0
Max Q Clear Time (g_c+I1), s	2.3	12.2		6.6	6.4	16.4		3.2
Green Ext Time (p_c), s	0.0	3.4		0.8	0.0	3.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	108	839	811	49	0		
Future Volume (vph)	108	839	811	49	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	19.0	54.9	45.4	35.6	35.6	9.5	35.6
Total Split (%)	19.0%	54.9%	45.4%	35.6%	35.6%	10%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	10.3	35.8	24.4	10.9	10.9		
Actuated g/C Ratio	0.17	0.59	0.40	0.18	0.18		
v/c Ratio	0.39	0.44	0.67	0.21	0.20		
Control Delay	32.6	7.9	19.4	26.3	0.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.6	7.9	19.4	26.3	0.9		
LOS	C	A	B	C	A		
Approach Delay		10.7	19.4		9.8		
Approach LOS		B	B		A		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 60.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 49.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	839	0	0	811	62	0	0	0	49	0	90
Future Volume (veh/h)	108	839	0	0	811	62	0	0	0	49	0	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	912	0	0	882	67	0	0	0	53	0	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	2023	0	4	1255	95	0	264	0	421	0	224
Arrive On Green	0.09	0.57	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1781	3647	0	1781	3347	254	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	117	912	0	0	468	481	0	0	0	53	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	0	1870	0	1781	0	1585
Q Serve(g_s), s	2.7	6.3	0.0	0.0	9.5	9.5	0.0	0.0	0.0	1.1	0.0	2.4
Cycle Q Clear(g_c), s	2.7	6.3	0.0	0.0	9.5	9.5	0.0	0.0	0.0	1.1	0.0	2.4
Prop In Lane	1.00		0.00	1.00		0.14	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	2023	0	4	666	684	0	264	0	421	0	224
V/C Ratio(X)	0.75	0.45	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.13	0.00	0.44
Avail Cap(c_a), veh/h	608	4033	0	210	1619	1663	0	1365	0	1428	0	1120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	5.3	0.0	0.0	11.3	11.3	0.0	0.0	0.0	16.1	0.0	16.7
Incr Delay (d2), s/veh	6.8	0.2	0.0	0.0	1.4	1.3	0.0	0.0	0.0	0.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.4	0.0	0.0	3.1	3.2	0.0	0.0	0.0	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	5.5	0.0	0.0	12.6	12.6	0.0	0.0	0.0	16.3	0.0	18.0
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		1029			949			0			151	
Approach Delay, s/veh		7.8			12.6			0.0			17.4	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	30.9		11.6	8.2	22.6		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.0	48.2		30.0	14.5	38.7		* 31
Max Q Clear Time (g_c+I1), s	0.0	8.3		4.4	4.7	11.5		0.0
Green Ext Time (p_c), s	0.0	5.1		0.6	0.2	4.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

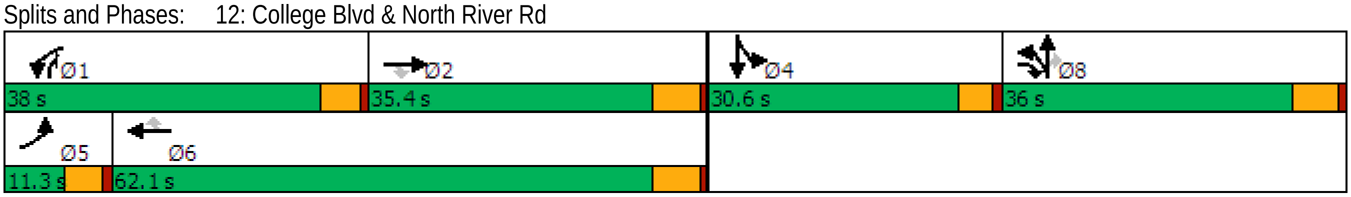
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	23	402	479	955	386	58	30	987	23	39
Future Volume (vph)	23	402	479	955	386	58	30	987	23	39
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.3	35.4	36.0	38.0	62.1	62.1	36.0	38.0	30.6	30.6
Total Split (%)	8.1%	25.3%	25.7%	27.1%	44.4%	44.4%	25.7%	27.1%	21.9%	21.9%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	19.4	51.5	33.5	51.7	51.7	30.7	70.1	10.6	10.6
Actuated g/C Ratio	0.05	0.17	0.45	0.30	0.46	0.46	0.27	0.62	0.09	0.09
v/c Ratio	0.26	0.72	0.56	1.02	0.26	0.08	1.13	0.53	0.15	0.25
Control Delay	64.1	52.4	5.7	74.9	21.8	1.7	121.0	4.4	50.3	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	52.4	5.7	74.9	21.8	1.7	121.0	4.4	50.3	50.6
LOS	E	D	A	E	C	A	F	A	D	D
Approach Delay		28.0			57.2		43.7			50.5
Approach LOS		C			E		D			D

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 113.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 45.0 Intersection LOS: D
Intersection Capacity Utilization 86.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	402	479	955	386	58	471	30	987	23	39	2
Future Volume (veh/h)	23	402	479	955	386	58	471	30	987	23	39	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	437	521	1038	420	63	512	33	1073	25	42	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	881	794	952	1776	792	425	27	1474	80	80	4
Arrive On Green	0.02	0.25	0.25	0.28	0.50	0.50	0.25	0.25	0.25	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1678	108	2790	1781	1771	84
Grp Volume(v), veh/h	25	437	521	1038	420	63	545	0	1073	25	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1786	0	1395	1781	0	1855
Q Serve(g_s), s	1.7	12.6	29.2	32.9	8.0	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Cycle Q Clear(g_c), s	1.7	12.6	29.2	32.9	8.0	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	42	881	794	952	1776	792	452	0	1474	80	0	84
V/C Ratio(X)	0.59	0.50	0.66	1.09	0.24	0.08	1.21	0.00	0.73	0.31	0.00	0.53
Avail Cap(c_a), veh/h	93	881	794	952	1776	792	452	0	1474	388	0	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.7	38.5	22.2	43.2	16.9	15.5	44.6	0.0	21.6	55.2	0.0	55.7
Incr Delay (d2), s/veh	12.7	0.4	2.0	56.8	0.1	0.0	112.0	0.0	1.8	2.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.5	16.2	21.4	3.3	0.9	27.3	0.0	11.5	0.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	38.9	24.1	100.1	17.0	15.6	156.6	0.0	23.4	57.4	0.0	60.8
LnGrp LOS	E	D	C	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		983			1521			1618			69	
Approach Delay, s/veh		31.9			73.6			68.3			59.5	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	35.4		10.0	7.9	65.5		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	32.9	29.6		26.0	6.2	56.3		30.2				
Max Q Clear Time (g_c+I1), s	34.9	31.2		4.8	3.7	10.0		32.2				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	2.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			61.5
HCM 6th LOS			E

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	79	95	1503	1344	55
Future Volume (vph)	28	79	95	1503	1344	55
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.0	7.2	51.0	39.8	39.8
Actuated g/C Ratio	0.18	0.26	0.11	0.81	0.63	0.63
v/c Ratio	0.09	0.21	0.26	0.57	0.65	0.06
Control Delay	27.3	16.3	35.3	6.9	13.8	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	16.3	35.3	7.0	13.8	5.9
LOS	C	B	D	A	B	A
Approach Delay	19.2			8.6	13.5	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 62.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 56.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	79	95	1503	1344	55
Future Volume (veh/h)	28	79	95	1503	1344	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	86	103	1634	1461	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	208	317	289	2503	1893	844
Arrive On Green	0.12	0.12	0.08	0.70	0.53	0.53
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	30	86	103	1634	1461	60
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	0.9	2.7	1.6	14.6	18.9	1.1
Cycle Q Clear(g_c), s	0.9	2.7	1.6	14.6	18.9	1.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	208	317	289	2503	1893	844
V/C Ratio(X)	0.14	0.27	0.36	0.65	0.77	0.07
Avail Cap(c_a), veh/h	859	897	387	3771	3061	1365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	19.6	25.1	4.7	10.8	6.6
Incr Delay (d2), s/veh	0.3	0.5	0.7	0.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.5	0.7	2.9	6.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	20.1	25.9	5.0	11.5	6.6
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	116			1737	1521	
Approach Delay, s/veh	20.9			6.2	11.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.7		11.4	10.0	36.7
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		16.6		4.7	3.6	20.9
Green Ext Time (p_c), s		12.9		0.4	0.1	10.0
Intersection Summary						
HCM 6th Ctrl Delay			9.0			
HCM 6th LOS			A			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	149	20	46	10	30	69	1401	40	1303	117
Future Volume (vph)	149	20	46	10	30	69	1401	40	1303	117
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	12.0	51.5	11.8	51.3	51.3
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.0%	51.5%	11.8%	51.3%	51.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.4	16.4		16.4	16.4	7.0	42.3	6.7	39.5	39.5
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.09	0.56	0.09	0.52	0.52
v/c Ratio	0.56	0.24		0.21	0.08	0.46	0.57	0.28	0.77	0.15
Control Delay	36.2	11.1		27.8	0.4	49.2	14.1	44.0	20.5	6.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	11.1		27.8	0.4	49.2	14.1	44.0	20.5	6.8
LOS	D	B		C	A	D	B	D	C	A
Approach Delay		26.8		18.2			15.7		20.1	
Approach LOS		C		B			B		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	20	70	46	10	30	69	1401	78	40	1303	117
Future Volume (veh/h)	149	20	70	46	10	30	69	1401	78	40	1303	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	22	76	50	11	33	75	1523	85	43	1416	127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	86	297	302	58	370	98	2492	139	72	1739	776
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.05	0.50	0.50	0.04	0.49	0.49
Sat Flow, veh/h	1362	368	1273	892	246	1585	1781	4949	276	1781	3554	1585
Grp Volume(v), veh/h	162	0	98	61	0	33	75	1048	560	43	1416	127
Grp Sat Flow(s),veh/h/ln	1362	0	1641	1138	0	1585	1781	1702	1821	1781	1777	1585
Q Serve(g_s), s	8.0	0.0	3.4	2.0	0.0	1.1	2.9	15.5	15.5	1.7	23.7	3.1
Cycle Q Clear(g_c), s	13.4	0.0	3.4	5.4	0.0	1.1	2.9	15.5	15.5	1.7	23.7	3.1
Prop In Lane	1.00		0.78	0.82		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	315	0	383	359	0	370	98	1714	917	72	1739	776
V/C Ratio(X)	0.51	0.00	0.26	0.17	0.00	0.09	0.77	0.61	0.61	0.60	0.81	0.16
Avail Cap(c_a), veh/h	618	0	749	665	0	723	175	2217	1186	170	2305	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	21.9	23.3	0.0	21.0	32.7	12.5	12.5	33.1	15.2	9.9
Incr Delay (d2), s/veh	1.3	0.0	0.3	0.2	0.0	0.1	11.9	0.4	0.7	7.7	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.3	0.8	0.0	0.4	1.5	5.2	5.7	0.9	8.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	0.0	22.3	23.5	0.0	21.1	44.6	12.8	13.2	40.8	17.0	10.0
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		260			94			1683			1586	
Approach Delay, s/veh		26.9			22.7			14.4			17.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	41.1		21.1	8.9	40.1		21.1				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.7	45.7		* 32	6.9	45.5		* 32				
Max Q Clear Time (g_c+I1), s	3.7	17.5		15.4	4.9	25.7		7.4				
Green Ext Time (p_c), s	0.0	9.5		0.9	0.0	8.6		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			16.7
HCM 6th LOS			B

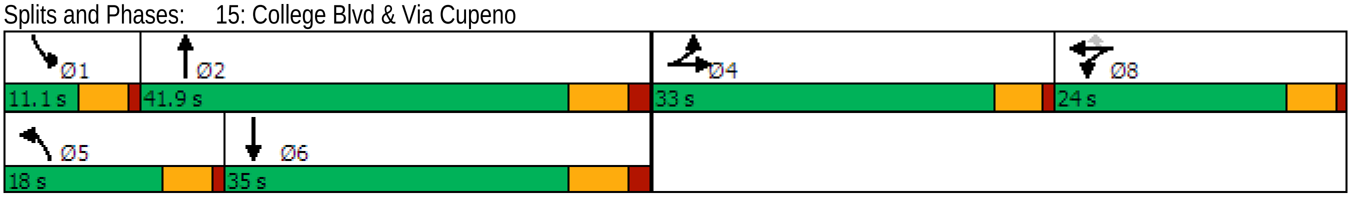
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	10	6	419	1319	2	1186
Future Volume (vph)	9	10	6	419	1319	2	1186
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	18.0	41.9	11.1	35.0
Total Split (%)	30.0%	21.8%	21.8%	16.4%	38.1%	10.1%	31.8%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	16.4	9.3	9.3	13.2	45.3	6.1	28.8
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.52	0.07	0.33
v/c Ratio	0.69	0.41	0.02	0.88	0.59	0.02	0.85
Control Delay	30.1	45.8	0.2	58.2	19.1	44.0	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	45.8	0.2	58.2	19.1	44.0	35.0
LOS	C	D	A	E	B	D	D
Approach Delay	30.1	42.1			28.0		35.0
Approach LOS	C	D			C		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 87.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

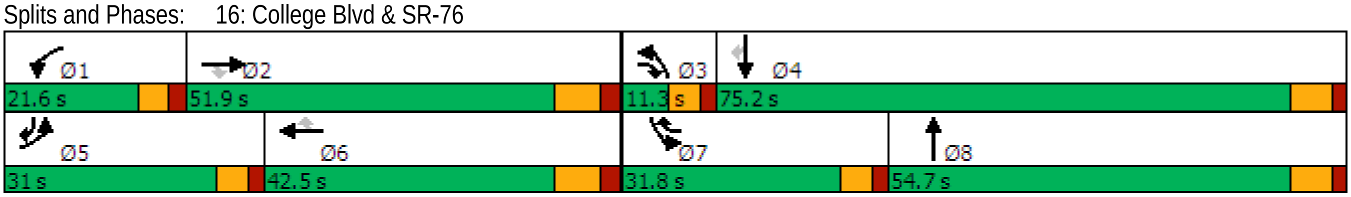


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	9	175	62	10	6	419	1319	99	2	1186	115
Future Volume (veh/h)	267	9	175	62	10	6	419	1319	99	2	1186	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	290	10	190	67	11	7	455	1434	108	2	1289	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	16	306	92	15	94	532	2270	171	6	1504	146
Arrive On Green	0.20	0.20	0.20	0.06	0.06	0.06	0.15	0.47	0.47	0.00	0.32	0.32
Sat Flow, veh/h	1781	80	1517	1540	253	1585	3456	4844	365	1781	4733	459
Grp Volume(v), veh/h	290	0	200	78	0	7	455	1008	534	2	927	487
Grp Sat Flow(s),veh/h/ln	1781	0	1597	1793	0	1585	1728	1702	1805	1781	1702	1788
Q Serve(g_s), s	12.7	0.0	9.4	3.5	0.0	0.3	10.5	18.3	18.3	0.1	20.9	20.9
Cycle Q Clear(g_c), s	12.7	0.0	9.4	3.5	0.0	0.3	10.5	18.3	18.3	0.1	20.9	20.9
Prop In Lane	1.00		0.95	0.86		1.00	1.00		0.20	1.00		0.26
Lane Grp Cap(c), veh/h	359	0	322	107	0	94	532	1595	846	6	1082	568
V/C Ratio(X)	0.81	0.00	0.62	0.73	0.00	0.07	0.86	0.63	0.63	0.34	0.86	0.86
Avail Cap(c_a), veh/h	609	0	546	416	0	368	544	1595	846	130	1172	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	29.9	37.9	0.0	36.4	33.8	16.4	16.4	40.7	26.2	26.2
Incr Delay (d2), s/veh	4.3	0.0	2.0	9.3	0.0	0.3	12.5	0.8	1.5	31.8	6.1	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	3.7	1.8	0.0	0.1	5.2	6.8	7.4	0.1	9.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	31.8	47.1	0.0	36.7	46.3	17.2	18.0	72.5	32.3	37.1
LnGrp LOS	D	A	C	D	A	D	D	B	B	E	C	D
Approach Vol, veh/h		490			85			1997			1416	
Approach Delay, s/veh		34.0			46.3			24.1			34.0	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	45.2		21.5	17.7	32.8		9.9				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	35.1		28.0	12.9	28.2		19.0				
Max Q Clear Time (g_c+I1), s	2.1	20.3		14.7	12.5	22.9		5.5				
Green Ext Time (p_c), s	0.0	6.9		1.8	0.1	3.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			29.3									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	502	1317	50	307	875	584	42	727	524	731	402
Future Volume (vph)	502	1317	50	307	875	584	42	727	524	731	402
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	31.0	51.9	11.3	21.6	42.5	31.8	11.3	54.7	31.8	75.2	31.0
Total Split (%)	19.4%	32.4%	7.1%	13.5%	26.6%	19.9%	7.1%	34.2%	19.9%	47.0%	19.4%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	25.3	43.9	57.5	15.9	34.5	68.6	5.6	47.9	26.1	70.7	102.8
Actuated g/C Ratio	0.16	0.27	0.36	0.10	0.22	0.43	0.04	0.30	0.16	0.44	0.64
v/c Ratio	1.01	1.03	0.09	0.98	0.87	0.86	0.38	1.09	1.02	0.51	0.42
Control Delay	106.1	87.1	0.3	114.2	70.0	47.4	84.9	106.1	107.1	34.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.1	87.1	0.3	114.2	70.0	47.4	84.9	106.1	107.1	34.1	13.2
LOS	F	F	A	F	E	D	F	F	F	C	B
Approach Delay		89.9			70.2			105.3		52.1	
Approach LOS		F			E			F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 77.3	Intersection LOS: E
Intersection Capacity Utilization 101.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	1317	50	307	875	584	42	727	321	524	731	402
Future Volume (veh/h)	502	1317	50	307	875	584	42	727	321	524	731	402
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	546	1432	54	334	951	635	46	790	349	570	795	437
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1401	470	343	1101	600	78	718	317	564	1564	948
Arrive On Green	0.16	0.27	0.27	0.10	0.22	0.22	0.02	0.30	0.30	0.16	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2399	1058	3456	3554	1585
Grp Volume(v), veh/h	546	1432	54	334	951	635	46	585	554	570	795	437
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1680	1728	1777	1585
Q Serve(g_s), s	25.3	43.9	4.0	15.4	28.7	34.5	2.1	47.9	47.9	26.1	25.8	24.5
Cycle Q Clear(g_c), s	25.3	43.9	4.0	15.4	28.7	34.5	2.1	47.9	47.9	26.1	25.8	24.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	546	1401	470	343	1101	600	78	532	503	564	1564	948
V/C Ratio(X)	1.00	1.02	0.11	0.97	0.86	1.06	0.59	1.10	1.10	1.01	0.51	0.46
Avail Cap(c_a), veh/h	546	1401	470	343	1101	600	121	532	503	564	1564	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	58.0	41.0	71.8	60.5	49.7	77.5	56.0	56.1	66.9	32.3	17.8
Incr Delay (d2), s/veh	38.3	29.8	0.1	41.1	7.3	52.9	7.1	68.9	71.0	40.7	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	22.8	1.6	8.8	13.2	32.7	1.0	31.6	30.2	14.7	11.3	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.6	87.8	41.1	112.9	67.8	102.6	84.5	124.9	127.1	107.7	32.6	18.2
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	C	B
Approach Vol, veh/h		2032			1920			1185			1802	
Approach Delay, s/veh		91.4			87.2			124.4			52.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	51.9	9.3	77.2	31.0	42.5	31.8	54.7
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 16	43.9	* 5.6	68.4	* 25	34.5	* 26	47.9
Max Q Clear Time (g_c+I1), s	17.4	45.9	4.1	27.8	27.3	36.5	28.1	49.9
Green Ext Time (p_c), s	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	85.8
HCM 6th LOS	F

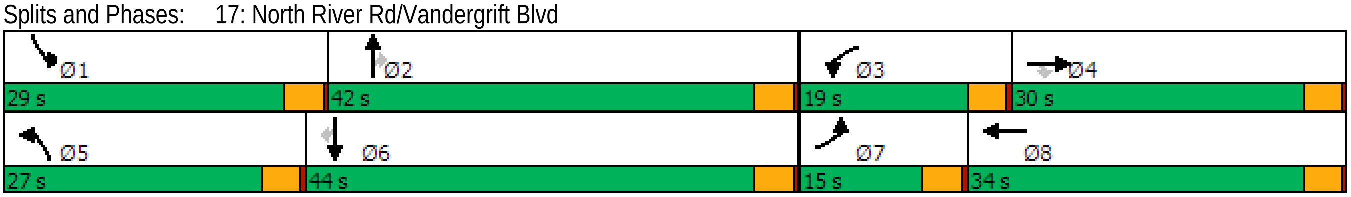
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	87	121	311	106	225	689	427	212	893	53
Future Volume (vph)	70	87	121	311	106	225	689	427	212	893	53
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	15.0	30.0	30.0	19.0	34.0	27.0	42.0	42.0	29.0	44.0	44.0
Total Split (%)	12.5%	25.0%	25.0%	15.8%	28.3%	22.5%	35.0%	35.0%	24.2%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.2	13.0	13.0	13.9	20.2	18.6	41.1	41.1	18.1	40.5	40.5
Actuated g/C Ratio	0.09	0.13	0.13	0.14	0.20	0.18	0.40	0.40	0.18	0.40	0.40
v/c Ratio	0.48	0.40	0.42	0.72	0.57	0.76	0.37	0.51	0.74	0.69	0.09
Control Delay	57.8	46.5	11.2	53.6	39.3	57.0	24.1	4.8	55.5	31.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	46.5	11.2	53.6	39.3	57.0	24.1	4.8	55.5	31.0	3.0
LOS	E	D	B	D	D	E	C	A	E	C	A
Approach Delay		34.0			48.1		23.5			34.2	
Approach LOS		C			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.3	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	87	121	311	106	89	225	689	427	212	893	53
Future Volume (veh/h)	70	87	121	311	106	89	225	689	427	212	893	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	95	132	338	115	97	245	749	464	230	971	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	208	176	422	167	141	285	2253	699	271	1540	687
Arrive On Green	0.06	0.11	0.11	0.12	0.18	0.18	0.16	0.44	0.44	0.15	0.43	0.43
Sat Flow, veh/h	1781	1870	1585	3456	937	791	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	76	95	132	338	0	212	245	749	464	230	971	58
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1728	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.9	4.4	7.5	8.8	0.0	10.6	12.4	8.9	21.4	11.6	19.7	2.0
Cycle Q Clear(g_c), s	3.9	4.4	7.5	8.8	0.0	10.6	12.4	8.9	21.4	11.6	19.7	2.0
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	208	176	422	0	308	285	2253	699	271	1540	687
V/C Ratio(X)	0.77	0.46	0.75	0.80	0.00	0.69	0.86	0.33	0.66	0.85	0.63	0.08
Avail Cap(c_a), veh/h	212	527	446	561	0	561	444	2253	699	482	1540	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	38.4	39.8	39.4	0.0	35.6	37.7	16.9	20.4	38.1	20.4	15.4
Incr Delay (d2), s/veh	12.0	1.6	6.3	6.1	0.0	2.7	9.9	0.4	4.9	7.2	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	3.2	4.0	0.0	4.6	6.1	3.4	8.5	5.5	8.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	40.0	46.0	45.5	0.0	38.3	47.6	17.3	25.3	45.3	22.4	15.6
LnGrp LOS	E	D	D	D	A	D	D	B	C	D	C	B
Approach Vol, veh/h		303			550			1458			1259	
Approach Delay, s/veh		46.4			42.7			24.9			26.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	44.7	15.3	14.3	18.8	44.0	9.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	38.0	15.0	26.0	23.0	40.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	13.6	23.4	10.8	9.5	14.4	21.7	5.9	12.6
Green Ext Time (p_c), s	0.5	6.1	0.5	0.8	0.5	7.0	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Appendix I

Cumulative Project Traffic Volumes and Assignments

	Cumulative											
	NBL	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
1) Douglas/SR-76												
AM Cumulative Total	0	0	0	0	0	36	20	96	0	0	120	3
C1 Villa Storia						2	1	11			39	
C2 Mission Cove						2	4	22			13	
C3 Pacific Coast								33			6	
C4 RDO Village XII								2			5	
C5 Oceanpointe								1			6	
C6 El Corazon						4		2			2	3
C7 Oceanside + Melrose								13			21	
C8 Onpoint						8	7					
C9 N. River Farms						20	8	12			28	
PM Cumulative Total	()	()	()	()	()	(39)	(39)	(151)	()	()	(124)	(12)
C1 Villa Storia						(1)	(2)	(43)			(18)	
C2 Mission Cove						(4)	(3)	(17)			(23)	
C3 Pacific Coast								(16)			(40)	
C4 RDO Village XII								(5)			(2)	
C5 Oceanpointe								(6)			(2)	
C6 El Corazon						(12)		(6)			(6)	(12)
C7 Oceanside + Melrose								(23)			(15)	
C8 Onpoint						(9)	(9)					
C9 N. River Farms						(13)	(25)	(35)			(18)	
2) Douglas/Mission (#23 Circ Element)	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	22	1	10	34	8	3	14	0	2	32	11
C1 Villa Storia			1	2				6		2	23	8
C2 Mission Cove		4			2			1			1	
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon		3			4							
C7 Oceanside + Melrose												
C8 Onpoint		7			8			7			8	
C9 N. River Farms		8		8	20	8	3					3
PM Cumulative Total	()	(49)	(2)	(14)	(38)	(5)	(10)	(35)	()	(1)	(21)	(14)
C1 Villa Storia			(2)	(9)				(25)		(1)	(11)	(4)
C2 Mission Cove		(3)			(4)			(1)			(1)	
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon		(12)			(12)							
C7 Oceanside + Melrose												
C8 Onpoint		(9)			(9)			(9)			(9)	
C9 N. River Farms		(25)		(5)	(13)	(5)	(10)					(10)
3) Douglas/El Camino Real (#22 Circ Eleme	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	11	27	1	0	48	25	11	0	6	1	0	0
C1 Villa Storia	8								2			
C2 Mission Cove		4			2	1	1					
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon	2	3			4				3			
C7 Oceanside + Melrose												
C8 Onpoint	1	5	1		6				1	1		
C9 N. River Farms		15			36	24	10					
PM Cumulative Total	(11)	(63)	(1)	()	(41)	(17)	(31)	()	(16)	(1)	()	()
C1 Villa Storia	(4)								(9)			
C2 Mission Cove		(3)			(4)	(2)	(1)					
C3 Pacific Coast												

C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon	(6)	(7)			(7)				(6)			
C7 Oceanside + Melrose												
C8 Onpoint	(1)	(7)	(1)		(7)				(1)	(1)		
C9 N. River Farms		(46)			(23)	(15)	(30)					
4) Douglas/Pala	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	3	31	4	0	65	0	0	0	4	4	0	0
C1 Villa Storia												
C2 Mission Cove	1	3	1		1				1	1		
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon	1		2						2	2		
C7 Oceanside + Melrose												
C8 Onpoint	1	3	1		4				1	1		
C9 N. River Farms		25			60							
PM Cumulative Total	(5)	(83)	(5)	()	(45)	()	()	()	(6)	(7)	()	()
C1 Villa Storia												
C2 Mission Cove	(1)	(2)	(1)		(2)				(2)	(2)		
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon	(3)		(3)						(3)	(4)		
C7 Oceanside + Melrose												
C8 Onpoint	(1)	(5)	(1)		(5)				(1)	(1)		
C9 N. River Farms		(76)			(38)							
5) Douglas/Rainier	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	29	2	0	64	0	0	0	0	1	0	0
C1 Villa Storia												
C2 Mission Cove		2	1		1					0		
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint		2	1		3					1		
C9 N. River Farms		25			60							
PM Cumulative Total	()	(81)	(2)	()	(43)	()	()	()	()	(2)	()	()
C1 Villa Storia												
C2 Mission Cove		(1)	(1)		(1)					(1)		
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint		(4)	(1)		(4)					(1)		
C9 N. River Farms		(76)			(38)							
6) Douglas/N River Rd (#21 Circ Element)	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	3	26	0	2	0	0	0	1	60	0	0
C1 Villa Storia												
C2 Mission Cove		2			1							
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint		1	1		1				1	1		
C9 N. River Farms			25							59		

PM Cumulative Total	(1)	(2)	(78)	()	(1)	()	()	()	(1)	(40)	()	()
C1 Villa Storia												
C2 Mission Cove		(1)			()							
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint	(1)	(1)	(2)		(1)				(1)	(2)		
C9 N. River Farms			(76)							(38)		
7) N River/Ave Descanso	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	0	0	0	1	1	25	0	0	59	0
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint						1	1					
C9 N. River Farms								25			59	
PM Cumulative Total	()	()	()	()	()	(2)	(2)	(76)	()	()	(38)	()
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint						(2)	(2)					
C9 N. River Farms								(76)			(38)	
8) N River/Westwinds MHP	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	0	0	0	0	0	25	0	0	59	0
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								25			59	
PM Cumulative Total	()	()	()	()	()	()	()	(76)	()	()	(38)	()
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								(76)			(38)	
9) N River/Riverview Way	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	0	0	0	0	0	25	0	0	59	0
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												

C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								25			59	
PM Cumulative Total	()	()	()	()	()	()	()	(76)	()	()	(38)	()
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								(76)			(38)	
10) N River/Calle Montecito	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	0	0	0	0	0	25	0	0	59	0
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								25			59	
PM Cumulative Total	()	()	()	()	()	()	()	(76)	()	()	(38)	()
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								(76)			(38)	
11) N River/Redondo	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	0	0	0	0	0	25	0	0	59	0
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								25			59	
PM Cumulative Total	()	()	()	()	()	()	()	(76)	()	()	(38)	()
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms								(76)			(38)	
12) N River/College (#33 Circ Element)	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	84	0	0	0	0	25	0	199	59	0
C1 Villa Storia			1							1		
C2 Mission Cove												

C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms			83					25		198	59	
PM Cumulative Total	()	()	(255)	()	()	()	()	(76)	()	(130)	(38)	()
C1 Villa Storia			(1)							(2)		
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms			(254)					(76)		(128)	(38)	
13) College/Buchanon Park	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	1	84	0	0	199	0	0	0	0	0	0	0
C1 Villa Storia	1	1			1				0			
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms		83			198							
PM Cumulative Total	()	(255)	()	()	(130)	()	()	()	(1)	()	()	()
C1 Villa Storia	()	(1)			(2)				(1)			
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms		(254)			(128)							
14) College/Adams	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	85	1	0	199	0	0	0	5	5	0	0
C1 Villa Storia		2			1							
C2 Mission Cove												
C3 Pacific Coast			1						5	5		
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms		83			198							
PM Cumulative Total	(5)	(255)	(5)	()	(131)	()	()	()	(3)	(3)	()	()
C1 Villa Storia		(1)			(3)							
C2 Mission Cove												
C3 Pacific Coast	(5)		(5)						(3)	(3)		
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												

C9 N. River Farms		(254)			(128)							
15) College/Via Cupeno	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	16	82	1	0	197	12	4	0	10	2	0	0
C1 Villa Storia	8	2			1				2			
C2 Mission Cove												
C3 Pacific Coast	1	1	1		10				5	2		
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose	7								3			
C8 Onpoint												
C9 N. River Farms		79			186	12	4					
PM Cumulative Total	(14)	(249)	(2)	()	(130)	(7)	(16)	()	(16)	(1)	()	()
C1 Villa Storia	(3)	(1)			(3)				(8)			
C2 Mission Cove												
C3 Pacific Coast	(8)	(10)	(2)		(6)				(1)	(1)		
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose	(3)								(7)			
C8 Onpoint												
C9 N. River Farms		(238)			(121)	(7)	(16)					
16) College/SR-76 (#34 Circ Element)	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	6	35	14	66	92	51	30	48	8	39	31	34
C1 Villa Storia	1					3	10	25	6		7	
C2 Mission Cove												
C3 Pacific Coast		3	6		17					33		
C4 RDO Village XII	5		5						2	2		
C5 Oceanpointe								10			3	
C6 El Corazon												
C7 Oceanside + Melrose			3	3				13		4	21	7
C8 Onpoint												
C9 N. River Farms		32		63	75	48	20					27
PM Cumulative Total	(9)	(116)	(47)	(48)	(57)	(42)	(65)	(40)	(8)	(25)	(53)	(84)
C1 Villa Storia	(7)					(11)	(4)	(12)	(3)		(27)	
C2 Mission Cove												
C3 Pacific Coast		(20)	(40)		(8)					(18)		
C4 RDO Village XII	(2)		(2)						(5)	(5)		
C5 Oceanpointe								(5)			(11)	
C6 El Corazon												
C7 Oceanside + Melrose			(5)	(7)				(23)		(2)	(15)	(3)
C8 Onpoint												
C9 N. River Farms		(96)		(41)	(49)	(31)	(61)					(81)
17) Vandergrift/N. River Rd	*NBL*	*NBT*	*NBR*	*SBL*	*SBT*	*SBR*	*EBL*	*EBT*	*EBR*	*WBL*	*WBT*	*WBR*
AM Cumulative Total	0	0	108	13	0	0	0	0	0	257	0	32
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												
C5 Oceanpointe												
C6 El Corazon												
C7 Oceanside + Melrose												
C8 Onpoint												
C9 N. River Farms			108	13						257		32
PM Cumulative Total	()	()	(330)	(41)	()	()	()	()	()	(166)	()	(20)
C1 Villa Storia												
C2 Mission Cove												
C3 Pacific Coast												
C4 RDO Village XII												

C5 Oceanpointe					
C6 El Corazon					
C7 Oceanside + Melrose					
C8 Onpoint					
C9 N. River Farms	(330)	(41)		(166)	(20)

Cumulative Project:	Villa Storia	Mission Cove	Pac Coast	RDO	Oc-ean Point	El Cor-azon	Oside Mel-rose	On Point	North River Farms LLG Fig 7-2
Douglas Drive									
N. River Rd to Rainier Way		24				10		25	1,166
Rainier Way to Pala Rd		42				20		55	1,166
Pala Rd to El Camino Real		84				50		111	1,166
El Camino Real to Mission Ave	146	84				100		222	699
Mission Ave to SR-76	146	84				100		222	389
North River Road									
Douglas Dr to Avenida Descanso								10	1,166
Ave. Descanso to Riverview Wy									1,166
Riverview Way to Calle Montecito									1,166
Calle Montecito to Redondo Dr									1,166
Redondo Dr to College Blvd									1,166
College Blvd to Vandergrift Blvd									5,051
College Blvd									
N. River Rd to Buchanon Park	10						122		3,886
Buchanon Park to Adams St	24						122		3,886
Adams St to Via Cupeno	24		100				122		3,886
Via Cupeno to SR-76	164	10	170				122		3,652
SR-76									
Foussat Rd to Douglas Dr	657	62	300	60	80	60	202	1,109	1,070
Douglas Dr to Rancho Del Oro	624	50	300	60	80	20	202	887	624
Frazee Rd to College Blvd	657	50		60	160		202	665	1,070
College Blvd to N. Santa Fe	394	40	300	60	160		202	665	1,426

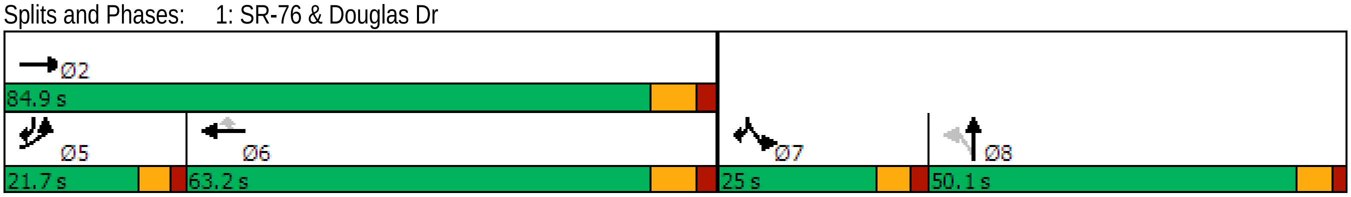
Appendix J

Existing + Cumulative Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	259	966	1881	208	247	526	
Future Volume (vph)	259	966	1881	208	247	526	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	21.7	84.9	63.2	63.2	25.0		50.1
Total Split (%)	13.6%	53.1%	39.5%	39.5%	15.6%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	15.0	75.9	55.2	55.2	18.9	40.0	
Actuated g/C Ratio	0.14	0.70	0.51	0.51	0.17	0.37	
v/c Ratio	0.60	0.43	1.14	0.25	0.87	0.41	
Control Delay	49.8	7.7	97.8	3.2	72.5	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	49.8	7.7	97.8	3.2	72.5	2.9	
LOS	D	A	F	A	E	A	
Approach Delay		16.6	88.3				
Approach LOS		B	F				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 108.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 54.9	Intersection LOS: D
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	966	0	0	1881	208	0	0	0	247	0	526
Future Volume (veh/h)	259	966	0	0	1881	208	0	0	0	247	0	526
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	282	1050	0	0	2045	226	0	0	0	268	0	572
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	425	2484	0	0	1856	828	0	2	0	299	0	0
Arrive On Green	0.12	0.70	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.17	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	268	
Grp Volume(v), veh/h	282	1050	0	0	2045	226	0	0	0	268	68.6	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	8.2	13.3	0.0	0.0	55.2	8.4	0.0	0.0	0.0	15.6		
Cycle Q Clear(g_c), s	8.2	13.3	0.0	0.0	55.2	8.4	0.0	0.0	0.0	15.6		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	425	2484	0	0	1856	828	0	2	0	299		
V/C Ratio(X)	0.66	0.42	0.00	0.00	1.10	0.27	0.00	0.00	0.00	0.90		
Avail Cap(c_a), veh/h	523	2585	0	0	1856	828	0	778	0	318		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	44.3	6.8	0.0	0.0	25.3	14.1	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	2.3	0.1	0.0	0.0	54.7	0.2	0.0	0.0	0.0	25.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.6	4.5	0.0	0.0	35.8	3.0	0.0	0.0	0.0	8.9		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	6.9	0.0	0.0	80.0	14.3	0.0	0.0	0.0	68.6		
LnGrp LOS	D	A	A	A	F	B	A	A	A	E		
Approach Vol, veh/h		1332			2271			0				
Approach Delay, s/veh		15.3			73.5			0.0				
Approach LOS		B			E							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		81.9			18.7	63.2	23.8	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		76.9			* 16	55.2	18.9	44.0				
Max Q Clear Time (g_c+I1), s		15.3			10.2	57.2	17.6	0.0				
Green Ext Time (p_c), s		6.4			0.6	0.0	0.1	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	53.1
HCM 6th LOS	D

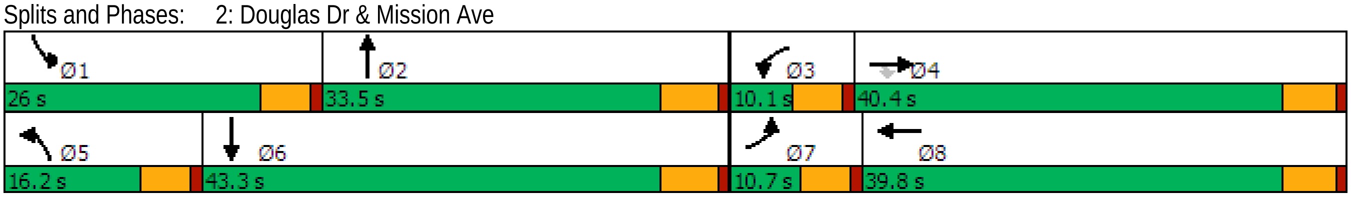
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	69	272	62	49	462	111	313	388	710
Future Volume (vph)	69	272	62	49	462	111	313	388	710
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.7	40.4	40.4	10.1	39.8	16.2	33.5	26.0	43.3
Total Split (%)	9.7%	36.7%	36.7%	9.2%	36.2%	14.7%	30.5%	23.6%	39.4%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.8	26.5	26.5	5.2	26.0	10.2	18.5	21.8	30.1
Actuated g/C Ratio	0.06	0.29	0.29	0.06	0.28	0.11	0.20	0.24	0.33
v/c Ratio	0.34	0.29	0.11	0.53	0.81	0.61	0.49	1.00	0.74
Control Delay	51.4	26.9	0.4	67.7	31.4	57.5	35.1	84.1	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	26.9	0.4	67.7	31.4	57.5	35.1	84.1	32.9
LOS	D	C	A	E	C	E	D	F	C
Approach Delay		27.0			33.5		40.9		49.7
Approach LOS		C			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 91.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	272	62	49	462	329	111	313	10	388	710	79
Future Volume (veh/h)	69	272	62	49	462	329	111	313	10	388	710	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	296	67	53	502	358	121	340	11	422	772	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	1099	490	76	599	426	164	466	15	454	952	106
Arrive On Green	0.05	0.31	0.31	0.04	0.30	0.30	0.09	0.13	0.13	0.25	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	1781	1982	1411	1781	3513	113	1781	3224	359
Grp Volume(v), veh/h	75	296	67	53	450	410	121	172	179	422	425	433
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1616	1781	1777	1850	1781	1777	1806
Q Serve(g_s), s	1.7	5.2	2.5	2.4	19.4	19.5	5.4	7.6	7.6	19.0	18.2	18.2
Cycle Q Clear(g_c), s	1.7	5.2	2.5	2.4	19.4	19.5	5.4	7.6	7.6	19.0	18.2	18.2
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.06	1.00		0.20
Lane Grp Cap(c), veh/h	172	1099	490	76	537	488	164	236	245	454	525	533
V/C Ratio(X)	0.43	0.27	0.14	0.70	0.84	0.84	0.74	0.73	0.73	0.93	0.81	0.81
Avail Cap(c_a), veh/h	236	1515	676	108	745	677	241	600	624	454	812	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	21.4	20.4	38.8	26.8	26.8	36.3	34.2	34.2	29.9	26.8	26.8
Incr Delay (d2), s/veh	1.7	0.1	0.1	10.9	6.1	6.7	6.5	4.3	4.2	25.9	3.6	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	0.9	1.3	8.8	8.1	2.6	3.5	3.6	11.1	7.9	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	21.5	20.6	49.6	32.8	33.5	42.8	38.5	38.4	55.8	30.4	30.3
LnGrp LOS	D	C	C	D	C	C	D	D	D	E	C	C
Approach Vol, veh/h		438			913			472			1280	
Approach Delay, s/veh		24.4			34.1			39.5			38.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	16.7	8.6	30.8	12.6	30.0	9.2	30.2
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	20.9	27.7	5.0	35.0	11.1	37.5	5.6	34.4
Max Q Clear Time (g_c+I1), s	21.0	9.6	4.4	7.2	7.4	20.2	3.7	21.5
Green Ext Time (p_c), s	0.0	1.2	0.0	1.6	0.1	3.5	0.0	3.3

Intersection Summary		
HCM 6th Ctrl Delay		35.5
HCM 6th LOS		D

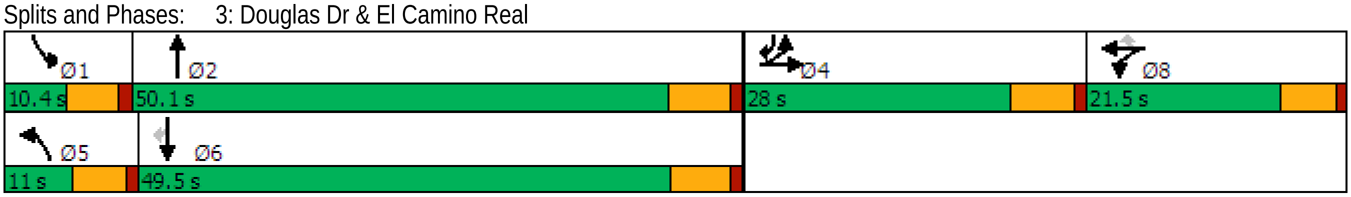
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	332	17	42	33	1	51	576	8	1090	1110
Future Volume (vph)	332	17	42	33	1	51	576	8	1090	1110
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	28.0	28.0		21.5	21.5	11.0	50.1	10.4	49.5	28.0
Total Split (%)	25.5%	25.5%		19.5%	19.5%	10.0%	45.5%	9.5%	45.0%	25.5%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	19.8	19.8	92.5	11.7	11.7	6.2	44.2	5.5	38.3	67.1
Actuated g/C Ratio	0.21	0.21	1.00	0.13	0.13	0.07	0.48	0.06	0.41	0.73
v/c Ratio	0.49	0.05	0.03	0.50	0.00	0.47	0.40	0.09	0.81	0.60
Control Delay	38.2	35.2	0.0	51.2	0.0	63.0	17.9	51.6	31.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	35.2	0.0	51.2	0.0	63.0	17.9	51.6	31.5	11.2
LOS	D	D	A	D	A	E	B	D	C	B
Approach Delay		33.9		50.7			21.3		21.4	
Approach LOS		C		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 92.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	17	42	70	33	1	51	576	37	8	1090	1110
Future Volume (veh/h)	332	17	42	70	33	1	51	576	37	8	1090	1110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	361	18	0	76	36	1	55	626	40	9	1185	1207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	261		99	47	128	76	1676	107	20	1644	1680
Arrive On Green	0.14	0.14	0.00	0.08	0.08	0.08	0.04	0.49	0.49	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1228	581	1585	1781	3392	216	1781	3554	2790
Grp Volume(v), veh/h	361	18	0	112	0	1	55	328	338	9	1185	1207
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1831	1781	1777	1395
Q Serve(g_s), s	8.5	0.7	0.0	5.2	0.0	0.0	2.6	9.7	9.7	0.4	22.8	25.8
Cycle Q Clear(g_c), s	8.5	0.7	0.0	5.2	0.0	0.0	2.6	9.7	9.7	0.4	22.8	25.8
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	482	261		146	0	128	76	878	905	20	1644	1680
V/C Ratio(X)	0.75	0.07		0.77	0.00	0.01	0.72	0.37	0.37	0.45	0.72	0.72
Avail Cap(c_a), veh/h	887	480		341	0	299	117	918	946	105	1820	1818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	31.7	0.0	38.3	0.0	35.9	40.2	13.3	13.3	41.7	18.4	11.8
Incr Delay (d2), s/veh	2.3	0.1	0.0	8.2	0.0	0.0	12.1	0.3	0.3	14.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.3	0.0	2.6	0.0	0.0	1.4	3.7	3.8	0.3	9.0	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	31.9	0.0	46.4	0.0	35.9	52.2	13.6	13.6	56.6	19.7	13.1
LnGrp LOS	D	C		D	A	D	D	B	B	E	B	B
Approach Vol, veh/h		379	A		113			721			2401	
Approach Delay, s/veh		37.2			46.4			16.5			16.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	48.2		18.1	9.0	45.5		12.4				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	43.9		21.8	5.6	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.4	11.7		10.5	4.6	27.8		7.2				
Green Ext Time (p_c), s	0.0	2.9		1.3	0.0	11.5		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		19.6
HCM 6th LOS		B

Notes

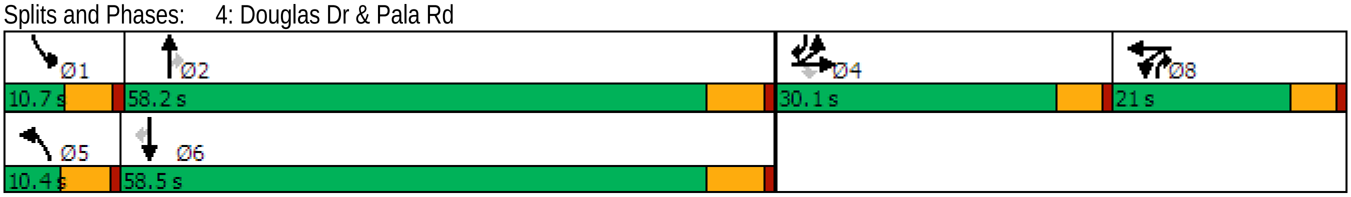
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	3	96	13	2	40	876	20	15	1940	67
Future Volume (vph)	66	3	96	13	2	40	876	20	15	1940	67
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	58.2	21.0	10.7	58.5	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	8.7%	48.5%	17.5%	8.9%	48.8%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.1	10.1	10.1	6.6	6.6	5.1	60.7	66.7	5.4	56.3	73.8
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.05	0.65	0.72	0.06	0.61	0.79
v/c Ratio	0.21	0.20	0.37	0.11	0.20	0.45	0.41	0.02	0.16	0.98	0.06
Control Delay	40.4	40.2	8.2	46.9	22.5	61.8	11.7	0.1	50.3	38.0	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	40.2	8.2	46.9	22.5	61.8	11.7	0.1	50.3	38.0	1.1
LOS	D	D	A	D	C	E	B	A	D	D	A
Approach Delay		21.7			30.6		13.6			36.8	
Approach LOS		C			C		B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	3	96	13	2	24	40	876	20	15	1940	67
Future Volume (veh/h)	66	3	96	13	2	24	40	876	20	15	1940	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	0	104	14	2	26	43	952	22	16	2109	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	0	146	77	5	65	65	2141	1024	33	2076	1072
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.04	0.60	0.60	0.02	0.58	0.58
Sat Flow, veh/h	3563	0	1585	1781	114	1488	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	74	0	104	14	0	28	43	952	22	16	2109	73
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1603	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	5.7	0.7	0.0	1.5	2.1	13.0	0.4	0.8	52.3	1.4
Cycle Q Clear(g_c), s	1.7	0.0	5.7	0.7	0.0	1.5	2.1	13.0	0.4	0.8	52.3	1.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	0	146	77	0	70	65	2141	1024	33	2076	1072
V/C Ratio(X)	0.23	0.00	0.71	0.18	0.00	0.40	0.66	0.44	0.02	0.49	1.02	0.07
Avail Cap(c_a), veh/h	995	0	443	316	0	285	99	2141	1024	105	2076	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	0.0	39.5	41.3	0.0	41.7	42.6	9.7	5.7	43.5	18.6	4.9
Incr Delay (d2), s/veh	0.3	0.0	6.3	1.1	0.0	3.7	10.7	0.1	0.0	10.9	23.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.4	0.3	0.0	0.7	1.1	4.6	0.2	0.4	25.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	45.8	42.4	0.0	45.4	53.3	9.8	5.7	54.4	42.4	4.9
LnGrp LOS	D	A	D	D	A	D	D	A	A	D	F	A
Approach Vol, veh/h		178			42			1017			2198	
Approach Delay, s/veh		42.5			44.4			11.6			41.2	
Approach LOS		D			D			B			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	60.1		13.3	8.7	58.5		9.0				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	5.3	52.0		25.0	5.0	52.3		15.9				
Max Q Clear Time (g_c+I1), s	2.8	15.0		7.7	4.1	54.3		3.5				
Green Ext Time (p_c), s	0.0	5.5		0.6	0.0	0.0		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			32.6
HCM 6th LOS			C

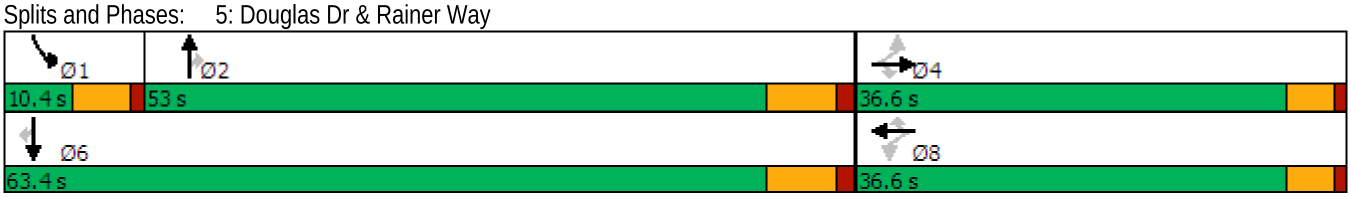
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	2	109	68	4	6	954	33	2	1851	37
Future Volume (vph)	15	2	109	68	4	6	954	33	2	1851	37
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.6	12.6		12.6	12.6	56.4	56.4	5.1	58.1	58.1
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.69	0.69	0.06	0.71	0.71
v/c Ratio		0.08	0.36		0.38	0.02	0.43	0.03	0.02	0.80	0.04
Control Delay		27.8	11.5		34.8	0.2	9.0	0.5	41.5	13.9	4.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		27.8	11.5		34.8	0.2	9.0	0.5	41.5	13.9	4.5
LOS		C	B		C	A	A	A	D	B	A
Approach Delay		13.7			32.0		8.7			13.8	
Approach LOS		B			C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 82.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	2	109	68	4	6	0	954	33	2	1851	37
Future Volume (veh/h)	15	2	109	68	4	6	0	954	33	2	1851	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	2	118	74	4	7	0	1037	36	2	2012	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	76	6	504	79	2	504	0	1818	811	5	2021	901
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.00	0.51	0.51	0.00	0.57	0.57
Sat Flow, veh/h	25	18	1585	25	8	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	18	0	118	78	0	7	0	1037	36	2	2012	40
Grp Sat Flow(s),veh/h/ln	42	0	1585	33	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.6	0.0	5.5	0.7	0.0	0.3	0.0	20.0	1.1	0.1	56.0	1.1
Cycle Q Clear(g_c), s	31.6	0.0	5.5	31.6	0.0	0.3	0.0	20.0	1.1	0.1	56.0	1.1
Prop In Lane	0.89		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	0	504	81	0	504	0	1818	811	5	2021	901
V/C Ratio(X)	0.22	0.00	0.23	0.96	0.00	0.01	0.00	0.57	0.04	0.42	1.00	0.04
Avail Cap(c_a), veh/h	87	0	510	86	0	510	0	1818	811	89	2024	903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	25.0	48.9	0.0	23.3	0.0	16.8	12.1	49.6	21.3	9.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	83.1	0.0	0.0	0.0	0.4	0.0	50.2	18.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	3.8	0.0	0.1	0.0	7.9	0.4	0.1	26.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	25.3	132.0	0.0	23.3	0.0	17.2	12.2	99.8	40.3	9.5
LnGrp LOS	D	A	C	F	A	C	A	B	B	F	D	A
Approach Vol, veh/h		136			85			1073			2054	
Approach Delay, s/veh		27.6			123.1			17.0			39.8	
Approach LOS		C			F			B			D	

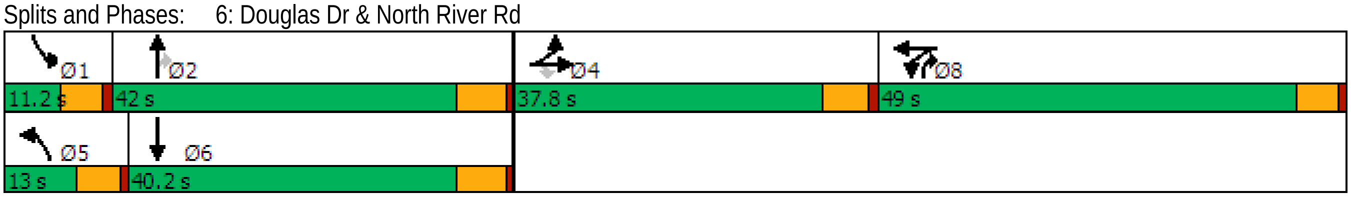
Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	5.7	57.7		36.4		63.3		36.4
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0
Max Q Clear Time (g_c+I1), s	2.1	22.0		33.6		58.0		33.6
Green Ext Time (p_c), s	0.0	5.8		0.0		0.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			34.1
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	94	187	942	47	71	434	375	18	705
Future Volume (vph)	53	94	187	942	47	71	434	375	18	705
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	49.0	49.0	13.0	42.0	49.0	11.2	40.2
Total Split (%)	27.0%	27.0%	27.0%	35.0%	35.0%	9.3%	30.0%	35.0%	8.0%	28.7%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	15.9	15.9	15.9	43.9	43.9	7.6	41.7	89.8	5.8	32.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.36	0.06	0.34	0.73	0.05	0.27
v/c Ratio	0.25	0.22	0.68	0.89	0.85dl	0.70	0.39	0.19	0.24	0.82
Control Delay	50.0	48.3	35.0	58.1	34.4	90.5	34.7	0.8	67.9	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	48.3	35.0	58.1	34.4	90.5	34.7	0.8	67.9	51.6
LOS	D	D	C	E	C	F	C	A	E	D
Approach Delay		41.1			45.4		24.7			52.0
Approach LOS		D			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 123.1	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: Douglas Dr & North River Rd



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	94	187	942	47	21	71	434	375	18	705	9
Future Volume (veh/h)	53	94	187	942	47	21	71	434	375	18	705	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	102	203	1024	51	23	77	472	408	20	766	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	564	251	1192	408	184	98	1027	1740	37	914	12
Arrive On Green	0.16	0.16	0.16	0.33	0.33	0.33	0.06	0.29	0.29	0.02	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3563	1221	551	1781	3554	2790	1781	3592	47
Grp Volume(v), veh/h	58	102	203	1024	0	74	77	472	408	20	379	397
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1771	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	3.3	2.9	14.3	31.0	0.0	3.4	4.9	12.6	7.5	1.3	23.4	23.4
Cycle Q Clear(g_c), s	3.3	2.9	14.3	31.0	0.0	3.4	4.9	12.6	7.5	1.3	23.4	23.4
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	282	564	251	1192	0	593	98	1027	1740	37	452	474
V/C Ratio(X)	0.21	0.18	0.81	0.86	0.00	0.12	0.79	0.46	0.23	0.55	0.84	0.84
Avail Cap(c_a), veh/h	493	984	439	1344	0	668	117	1101	1797	89	523	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	42.1	46.9	35.9	0.0	26.7	53.9	33.7	9.6	56.1	40.8	40.8
Incr Delay (d2), s/veh	0.5	0.2	8.4	5.7	0.0	0.1	24.8	0.7	0.1	12.2	12.4	11.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	6.2	14.2	0.0	1.5	2.9	5.5	4.8	0.7	11.7	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	42.3	55.4	41.6	0.0	26.8	78.7	34.4	9.7	68.3	53.2	52.7
LnGrp LOS	D	D	E	D	A	C	E	C	A	E	D	D
Approach Vol, veh/h		363			1098			957			796	
Approach Delay, s/veh		49.7			40.6			27.4			53.3	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.6		24.1	11.8	35.6		44.1
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	5.8	35.8		32.0	7.6	34.0		43.6
Max Q Clear Time (g_c+I1), s	3.3	14.6		16.3	6.9	25.4		33.0
Green Ext Time (p_c), s	0.0	8.6		2.0	0.0	4.1		5.6

Intersection Summary			
HCM 6th Ctrl Delay			40.9
HCM 6th LOS			D

Notes

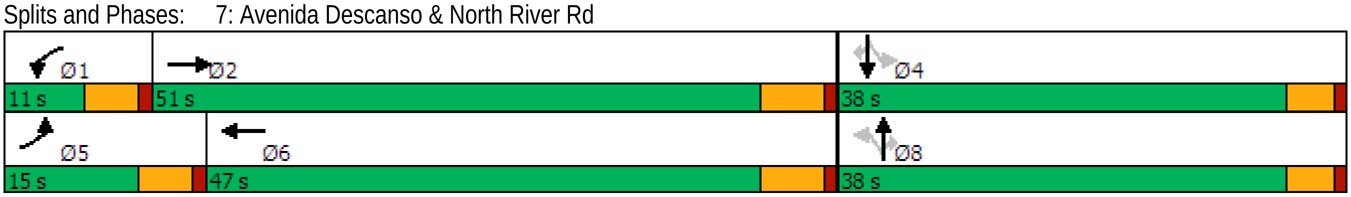
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	52	445	18	844	2	2	30	111	12	105
Future Volume (vph)	52	445	18	844	2	2	30	111	12	105
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	15.0	51.0	11.0	47.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	15.0%	51.0%	11.0%	47.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	8.3	29.7	6.8	24.3		13.9	13.9		13.9	13.9
Actuated g/C Ratio	0.15	0.52	0.12	0.42		0.24	0.24		0.24	0.24
v/c Ratio	0.22	0.27	0.10	0.65		0.01	0.07		0.40	0.24
Control Delay	32.7	9.1	35.7	17.3		21.2	0.3		25.7	6.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	32.7	9.1	35.7	17.3		21.2	0.3		25.7	6.6
LOS	C	A	D	B		C	A		C	A
Approach Delay		11.6		17.6		2.6			16.9	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 57.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 55.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	445	5	18	844	44	2	2	30	111	12	105
Future Volume (veh/h)	52	445	5	18	844	44	2	2	30	111	12	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	484	5	20	917	48	2	2	33	121	13	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	1255	13	40	1117	58	70	49	681	92	6	681
Arrive On Green	0.05	0.35	0.35	0.02	0.33	0.33	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1781	3603	37	1781	3435	180	2	114	1585	10	13	1585
Grp Volume(v), veh/h	57	239	250	20	474	491	4	0	33	134	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1838	115	0	1585	23	0	1585
Q Serve(g_s), s	2.5	7.9	7.9	0.9	19.1	19.1	0.1	0.0	0.9	0.3	0.0	3.4
Cycle Q Clear(g_c), s	2.5	7.9	7.9	0.9	19.1	19.1	33.4	0.0	0.9	33.4	0.0	3.4
Prop In Lane	1.00		0.02	1.00		0.10	0.50		1.00	0.90		1.00
Lane Grp Cap(c), veh/h	81	619	649	40	578	598	119	0	681	98	0	681
V/C Ratio(X)	0.70	0.39	0.39	0.50	0.82	0.82	0.03	0.00	0.05	1.37	0.00	0.17
Avail Cap(c_a), veh/h	227	1034	1084	135	942	975	119	0	682	98	0	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.6	19.1	19.1	37.5	24.1	24.1	19.0	0.0	12.9	37.1	0.0	13.6
Incr Delay (d2), s/veh	10.6	0.4	0.4	9.3	3.0	2.9	0.1	0.0	0.0	217.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.1	3.3	0.5	8.1	8.3	0.0	0.0	0.3	7.7	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	19.4	19.4	46.8	27.2	27.1	19.1	0.0	12.9	254.7	0.0	13.7
LnGrp LOS	D	B	B	D	C	C	B	A	B	F	A	B
Approach Vol, veh/h		546			985			37			248	
Approach Delay, s/veh		22.3			27.5			13.6			143.9	
Approach LOS		C			C			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	32.9		38.0	8.6	31.1		38.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	45.2		33.4	9.9	41.2		33.4				
Max Q Clear Time (g_c+I1), s	2.9	9.9		35.4	4.5	21.1		35.4				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	4.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	572	912	7	9	26
Future Vol, veh/h	12	572	912	7	9	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	622	991	8	10	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	999	0	-	0	1332	500
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	337	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	689	-	-	-	146	516
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	689	-	-	-	143	516
Mov Cap-2 Maneuver	-	-	-	-	143	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	689	-	-	-	309
HCM Lane V/C Ratio	0.019	-	-	-	0.123
HCM Control Delay (s)	10.3	-	-	-	18.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	562	0	0	877	5	0	0	0	15	0	40
Future Vol, veh/h	22	562	0	0	877	5	0	0	0	15	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	611	0	0	953	5	0	0	0	16	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	958	0	0	611	0	0	-	-	306	1310	1615	479
Stage 1	-	-	-	-	-	-	-	-	-	956	956	-
Stage 2	-	-	-	-	-	-	-	-	-	354	659	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	714	-	-	964	-	-	0	0	690	117	103	533
Stage 1	-	-	-	-	-	-	0	0	-	277	335	-
Stage 2	-	-	-	-	-	-	0	0	-	636	459	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	714	-	-	964	-	-	-	-	690	114	99	533
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	114	99	-
Stage 1	-	-	-	-	-	-	-	-	-	268	335	-
Stage 2	-	-	-	-	-	-	-	-	-	615	443	-

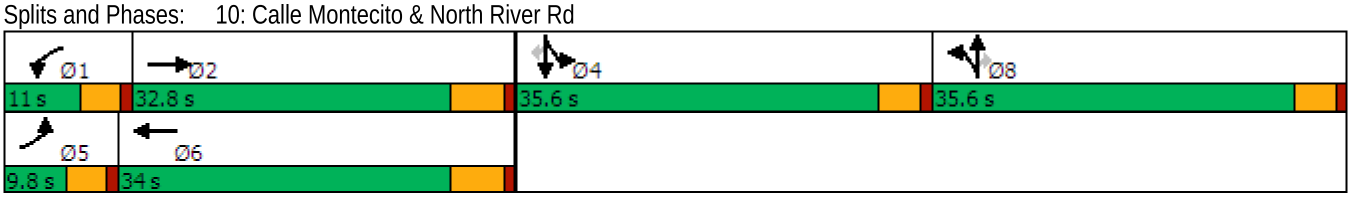
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	0	22.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	714	-	-	964	-	-	266
HCM Lane V/C Ratio	-	0.033	-	-	-	-	-	0.225
HCM Control Delay (s)	0	10.2	-	-	0	-	-	22.4
HCM Lane LOS	A	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.8

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	49	511	32	728	1	8	1	105
Future Volume (vph)	49	511	32	728	1	8	1	105
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.6	31.3	6.5	29.8	9.8	9.8	15.6	15.6
Actuated g/C Ratio	0.07	0.40	0.08	0.38	0.12	0.12	0.20	0.20
v/c Ratio	0.42	0.42	0.24	0.68	0.06	0.03	0.61	0.28
Control Delay	52.3	22.7	44.8	27.1	32.0	0.2	37.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	22.7	44.8	27.1	32.0	0.2	37.6	8.4
LOS	D	C	D	C	C	A	D	A
Approach Delay		25.2		27.7	19.0		27.5	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 78.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	511	27	32	728	98	11	1	8	196	1	105
Future Volume (veh/h)	49	511	27	32	728	98	11	1	8	196	1	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	555	29	35	791	107	12	1	9	213	1	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1157	60	67	1019	138	177	15	170	306	1	273
Arrive On Green	0.05	0.34	0.34	0.04	0.32	0.32	0.11	0.11	0.11	0.17	0.17	0.17
Sat Flow, veh/h	1781	3436	179	1781	3145	425	1650	138	1585	1773	8	1585
Grp Volume(v), veh/h	53	287	297	35	447	451	13	0	9	214	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1781	1777	1794	1788	0	1585	1782	0	1585
Q Serve(g_s), s	1.6	7.1	7.2	1.1	12.7	12.7	0.4	0.0	0.3	6.3	0.0	3.6
Cycle Q Clear(g_c), s	1.6	7.1	7.2	1.1	12.7	12.7	0.4	0.0	0.3	6.3	0.0	3.6
Prop In Lane	1.00		0.10	1.00		0.24	0.92		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	598	619	67	576	581	191	0	170	307	0	273
V/C Ratio(X)	0.59	0.48	0.48	0.52	0.78	0.78	0.07	0.00	0.05	0.70	0.00	0.42
Avail Cap(c_a), veh/h	169	860	889	207	898	906	989	0	877	986	0	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	14.7	14.7	26.5	17.1	17.1	22.5	0.0	22.5	21.8	0.0	20.7
Incr Delay (d2), s/veh	6.2	0.6	0.6	6.2	2.3	2.3	0.1	0.0	0.1	2.9	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.6	2.7	0.5	4.9	5.0	0.2	0.0	0.1	2.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	15.3	15.3	32.7	19.4	19.4	22.6	0.0	22.6	24.7	0.0	21.7
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		637			933			22			328	
Approach Delay, s/veh		16.7			19.9			22.6			23.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	24.6		14.3	7.3	23.9		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0
Max Q Clear Time (g_c+I1), s	3.1	9.2		8.3	3.6	14.7		2.4
Green Ext Time (p_c), s	0.0	2.2		1.3	0.0	3.4		0.0

Intersection Summary			
HCM 6th Ctrl Delay			19.5
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	33	700	811	1	0	83	0	
Future Volume (vph)	33	700	811	1	0	83	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.4	25.4	21.9		12.9	11.7	11.7	
Actuated g/C Ratio	0.14	0.49	0.43		0.25	0.23	0.23	
v/c Ratio	0.14	0.44	0.63		0.00	0.28	0.24	
Control Delay	30.3	9.2	15.3		0.0	21.9	1.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	30.3	9.2	15.3		0.0	21.9	1.9	
LOS	C	A	B		A	C	A	
Approach Delay		10.1	15.3				10.3	
Approach LOS		B	B				B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 51.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 45.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	700	0	0	811	52	1	0	1	83	0	112
Future Volume (veh/h)	33	700	0	0	811	52	1	0	1	83	0	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	761	0	0	882	57	1	0	1	90	0	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	1908	0	5	1293	84	194	38	95	423	0	241
Arrive On Green	0.04	0.54	0.00	0.00	0.38	0.38	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3389	219	377	250	627	1416	0	1585
Grp Volume(v), veh/h	36	761	0	0	462	477	2	0	0	90	0	122
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1831	1254	0	0	1416	0	1585
Q Serve(g_s), s	0.8	5.0	0.0	0.0	8.6	8.6	0.0	0.0	0.0	0.0	0.0	2.8
Cycle Q Clear(g_c), s	0.8	5.0	0.0	0.0	8.6	8.6	2.8	0.0	0.0	1.8	0.0	2.8
Prop In Lane	1.00		0.00	1.00		0.12	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	74	1908	0	5	678	699	327	0	0	423	0	241
V/C Ratio(X)	0.49	0.40	0.00	0.00	0.68	0.68	0.01	0.00	0.00	0.21	0.00	0.51
Avail Cap(c_a), veh/h	338	4236	0	248	2028	2090	1240	0	0	1305	0	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	5.4	0.0	0.0	10.2	10.2	14.2	0.0	0.0	15.0	0.0	15.4
Incr Delay (d2), s/veh	5.0	0.1	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.1	0.0	0.0	2.7	2.7	0.0	0.0	0.0	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	5.5	0.0	0.0	11.4	11.4	14.2	0.0	0.0	15.2	0.0	17.0
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		797			939			2			212	
Approach Delay, s/veh		6.3			11.4			14.2			16.3	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	27.9		11.6	6.1	21.8		11.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32				
Max Q Clear Time (g_c+I1), s	0.0	7.0		4.8	2.8	10.6		4.8				
Green Ext Time (p_c), s	0.0	4.1		0.8	0.0	4.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			9.9
HCM 6th LOS			A

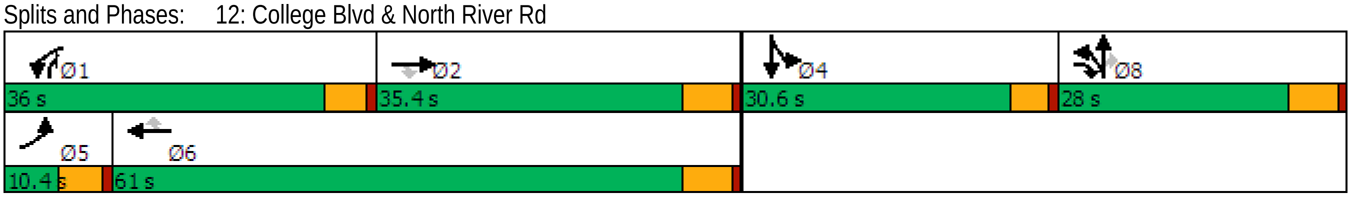
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	237	547	1148	538	70	21	1017	25	49
Future Volume (vph)	14	237	547	1148	538	70	21	1017	25	49
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	10.4	35.4	28.0	36.0	61.0	61.0	28.0	36.0	30.6	30.6
Total Split (%)	8.0%	27.2%	21.5%	27.7%	46.9%	46.9%	21.5%	27.7%	23.5%	23.5%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	14.5	38.7	31.7	49.8	49.8	22.7	60.4	10.7	10.7
Actuated g/C Ratio	0.05	0.15	0.39	0.32	0.50	0.50	0.23	0.61	0.11	0.11
v/c Ratio	0.15	0.50	0.69	1.14	0.33	0.09	0.86	0.53	0.14	0.31
Control Delay	55.3	42.9	9.6	105.3	17.1	2.0	60.4	3.0	43.0	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	42.9	9.6	105.3	17.1	2.0	60.4	3.0	43.0	42.3
LOS	E	D	A	F	B	A	E	A	D	D
Approach Delay		20.3			74.2		16.9			42.5
Approach LOS		C			E		B			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 98.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	237	547	1148	538	70	304	21	1017	25	49	9
Future Volume (veh/h)	14	237	547	1148	538	70	304	21	1017	25	49	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	258	595	1248	585	76	330	23	1105	27	53	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	959	749	974	1901	848	338	24	1351	92	79	15
Arrive On Green	0.02	0.27	0.27	0.28	0.53	0.53	0.20	0.20	0.20	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1670	116	2790	1781	1530	289
Grp Volume(v), veh/h	15	258	595	1248	585	76	353	0	1105	27	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1818
Q Serve(g_s), s	0.9	6.3	29.6	30.9	10.0	2.6	21.5	0.0	22.2	1.6	0.0	3.7
Cycle Q Clear(g_c), s	0.9	6.3	29.6	30.9	10.0	2.6	21.5	0.0	22.2	1.6	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	30	959	749	974	1901	848	362	0	1351	92	0	94
V/C Ratio(X)	0.50	0.27	0.79	1.28	0.31	0.09	0.98	0.00	0.82	0.29	0.00	0.67
Avail Cap(c_a), veh/h	86	959	749	974	1901	848	362	0	1351	422	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.5	31.5	23.1	39.4	14.2	12.5	43.5	0.0	24.2	50.1	0.0	51.1
Incr Delay (d2), s/veh	12.5	0.1	5.9	134.6	0.1	0.0	40.7	0.0	4.1	1.8	0.0	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.7	17.6	31.1	4.0	0.9	13.5	0.0	12.5	0.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	31.7	29.0	174.0	14.3	12.5	84.2	0.0	28.2	51.8	0.0	59.1
LnGrp LOS	E	C	C	F	B	B	F	A	C	D	A	E
Approach Vol, veh/h		868			1909			1458			90	
Approach Delay, s/veh		30.4			118.6			41.8			56.9	
Approach LOS		C			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	35.4		10.3	6.9	64.5		28.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	30.9	29.6		26.0	5.3	55.2		22.2				
Max Q Clear Time (g_c+I1), s	32.9	31.6		5.7	2.9	12.0		24.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			73.7									
HCM 6th LOS			E									

LOS Engineering, Inc.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	27	27	1291	1655	74
Future Volume (vph)	50	27	27	1291	1655	74
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.5	6.3	57.0	50.7	50.7
Actuated g/C Ratio	0.16	0.23	0.09	0.81	0.72	0.72
v/c Ratio	0.19	0.08	0.10	0.49	0.71	0.07
Control Delay	27.2	15.9	34.6	6.3	15.7	6.6
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.2	15.9	34.6	6.3	15.7	6.6
LOS	C	B	C	A	B	A
Approach Delay	23.2			6.9	15.3	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 70.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	27	27	1291	1655	74
Future Volume (veh/h)	50	27	27	1291	1655	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	29	29	1403	1799	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	180	221	133	2567	2122	946
Arrive On Green	0.10	0.10	0.04	0.72	0.60	0.60
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	54	29	29	1403	1799	80
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.7	0.9	0.5	10.7	24.3	1.3
Cycle Q Clear(g_c), s	1.7	0.9	0.5	10.7	24.3	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	180	221	133	2567	2122	946
V/C Ratio(X)	0.30	0.13	0.22	0.55	0.85	0.08
Avail Cap(c_a), veh/h	848	815	376	3117	2422	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	22.2	27.4	3.7	9.7	5.0
Incr Delay (d2), s/veh	0.9	0.3	0.8	0.2	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2	2.0	7.6	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.4	22.5	28.2	3.9	12.4	5.1
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	83			1432	1879	
Approach Delay, s/veh	24.4			4.4	12.1	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		48.3		10.5	7.4	40.9
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		12.7		3.7	2.5	26.3
Green Ext Time (p_c), s		9.6		0.3	0.0	8.8

Intersection Summary			
HCM 6th Ctrl Delay			9.1
HCM 6th LOS			A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	174	12	81	17	40	20	1095	16	1465	204
Future Volume (vph)	174	12	81	17	40	20	1095	16	1465	204
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	43.2	10.1	43.2	43.2
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	11.2%	48.0%	11.2%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.4	16.4		16.4	16.4	5.1	41.1	5.1	39.2	39.2
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.07	0.59	0.07	0.56	0.56
v/c Ratio	0.63	0.25		0.35	0.10	0.17	0.41	0.13	0.80	0.24
Control Delay	33.6	7.5		25.4	0.4	39.0	10.3	38.5	20.0	8.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	7.5		25.4	0.4	39.0	10.3	38.5	20.0	8.2
LOS	C	A		C	A	D	B	D	B	A
Approach Delay		23.8		18.2			10.8		18.7	
Approach LOS		C		B			B		B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 69.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	12	92	81	17	40	20	1095	30	16	1465	204
Future Volume (veh/h)	174	12	92	81	17	40	20	1095	30	16	1465	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	13	100	88	18	43	22	1190	33	17	1592	222
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	53	408	348	63	453	44	2493	69	35	1718	766
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.02	0.49	0.49	0.02	0.48	0.48
Sat Flow, veh/h	1341	186	1428	913	222	1585	1781	5107	142	1781	3554	1585
Grp Volume(v), veh/h	189	0	113	106	0	43	22	793	430	17	1592	222
Grp Sat Flow(s),veh/h/ln	1341	0	1613	1135	0	1585	1781	1702	1845	1781	1777	1585
Q Serve(g_s), s	10.2	0.0	4.1	4.3	0.0	1.5	0.9	11.8	11.8	0.7	31.7	6.4
Cycle Q Clear(g_c), s	18.6	0.0	4.1	8.4	0.0	1.5	0.9	11.8	11.8	0.7	31.7	6.4
Prop In Lane	1.00		0.88	0.83		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	330	0	461	412	0	453	44	1662	901	35	1718	766
V/C Ratio(X)	0.57	0.00	0.25	0.26	0.00	0.09	0.50	0.48	0.48	0.48	0.93	0.29
Avail Cap(c_a), veh/h	514	0	682	597	0	670	118	1683	912	118	1757	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	20.7	23.4	0.0	19.8	36.4	12.9	12.9	36.7	18.3	11.7
Incr Delay (d2), s/veh	1.6	0.0	0.3	0.3	0.0	0.1	8.7	0.2	0.4	9.8	8.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	1.5	1.5	0.0	0.5	0.5	4.1	4.5	0.4	13.6	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	21.0	23.7	0.0	19.9	45.2	13.1	13.3	46.4	27.2	11.9
LnGrp LOS	C	A	C	C	A	B	D	B	B	D	C	B
Approach Vol, veh/h		302			149			1245			1831	
Approach Delay, s/veh		27.6			22.6			13.8			25.5	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	42.7		26.3	7.0	42.4		26.3				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	5.0	37.4		* 32	5.0	37.4		* 32				
Max Q Clear Time (g_c+I1), s	2.7	13.8		20.6	2.9	33.7		10.4				
Green Ext Time (p_c), s	0.0	6.2		0.9	0.0	2.9		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			21.4
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

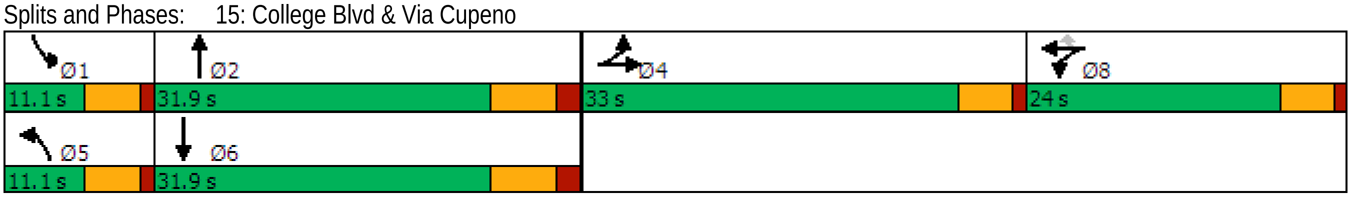
AM Existing + Cumulative
15: College Blvd & Via Cupeno

Timings

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1	5	1	148	1093	1	1559
Future Volume (vph)	1	5	1	148	1093	1	1559
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	11.1	31.9	11.1	31.9
Total Split (%)	33.0%	24.0%	24.0%	11.1%	31.9%	11.1%	31.9%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	11.8	11.8	6.2	35.9	6.2	26.0
Actuated g/C Ratio	0.15	0.16	0.16	0.08	0.48	0.08	0.35
v/c Ratio	0.20	0.54	0.00	0.56	0.50	0.01	1.00
Control Delay	18.1	38.6	0.0	45.5	18.7	39.0	48.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	38.6	0.0	45.5	18.7	39.0	48.6
LOS	B	D	A	D	B	D	D
Approach Delay	18.1	38.4			21.8		48.5
Approach LOS	B	D			C		D

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 74.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 65.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1	45	135	5	1	148	1093	38	1	1559	64
Future Volume (veh/h)	51	1	45	135	5	1	148	1093	38	1	1559	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	1	49	147	5	1	161	1188	41	1	1695	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	3	162	192	7	177	296	2306	80	3	1866	77
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.09	0.45	0.45	0.00	0.37	0.37
Sat Flow, veh/h	1762	32	1575	1725	59	1585	3456	5068	175	1781	5029	208
Grp Volume(v), veh/h	56	0	49	152	0	1	161	798	431	1	1147	618
Grp Sat Flow(s),veh/h/ln	1782	0	1587	1784	0	1585	1728	1702	1839	1781	1702	1833
Q Serve(g_s), s	1.9	0.0	1.9	5.5	0.0	0.0	3.0	11.1	11.1	0.0	21.3	21.3
Cycle Q Clear(g_c), s	1.9	0.0	1.9	5.5	0.0	0.0	3.0	11.1	11.1	0.0	21.3	21.3
Prop In Lane	0.99		0.99	0.97		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	183	0	163	199	0	177	296	1549	837	3	1263	680
V/C Ratio(X)	0.30	0.00	0.30	0.76	0.00	0.01	0.54	0.52	0.52	0.34	0.91	0.91
Avail Cap(c_a), veh/h	750	0	667	509	0	452	311	1549	837	161	1283	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	27.6	28.7	0.0	26.3	29.2	12.9	12.9	33.2	19.9	19.9
Incr Delay (d2), s/veh	0.9	0.0	1.0	6.0	0.0	0.0	1.8	0.3	0.5	57.1	9.5	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.7	2.6	0.0	0.0	1.3	3.8	4.2	0.1	9.2	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	0.0	28.7	34.7	0.0	26.3	31.0	13.2	13.5	90.3	29.4	35.7
LnGrp LOS	C	A	C	C	A	C	C	B	B	F	C	D
Approach Vol, veh/h		105			153			1390			1766	
Approach Delay, s/veh		28.6			34.7			15.3			31.6	
Approach LOS		C			C			B			C	

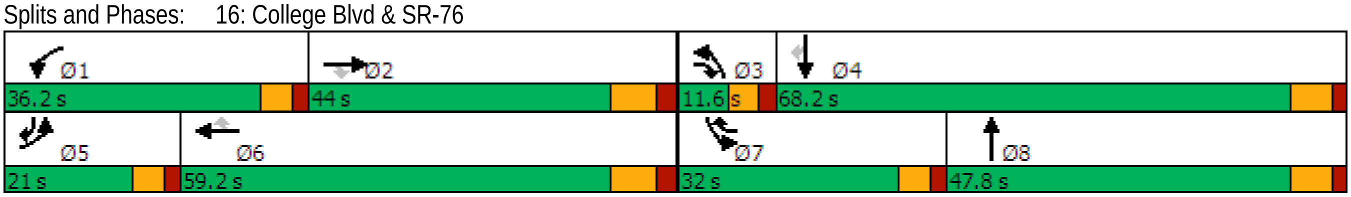
Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	37.1		11.9	10.8	31.5		12.4
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0
Max Green Setting (Gmax), s	6.0	25.1		28.0	6.0	25.1		19.0
Max Q Clear Time (g_c+I1), s	2.0	13.1		3.9	5.0	23.3		7.5
Green Ext Time (p_c), s	0.0	4.7		0.4	0.1	1.4		0.4

Intersection Summary		
HCM 6th Ctrl Delay		25.0
HCM 6th LOS		C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	321	814	30	566	1401	482	54	482	558	800	376
Future Volume (vph)	321	814	30	566	1401	482	54	482	558	800	376
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	35.7	49.6	29.9	50.3	84.6	5.9	39.3	26.3	62.2	84.3
Actuated g/C Ratio	0.10	0.23	0.32	0.19	0.32	0.54	0.04	0.25	0.17	0.40	0.54
v/c Ratio	1.04	0.77	0.06	0.94	0.94	0.59	0.46	0.93	1.06	0.62	0.45
Control Delay	128.2	62.4	0.2	86.5	63.9	24.9	87.1	70.0	114.8	41.3	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.2	62.4	0.2	86.5	63.9	24.9	87.1	70.0	114.8	41.3	18.2
LOS	F	E	A	F	E	C	F	E	F	D	B
Approach Delay		78.9			61.4			71.2		59.9	
Approach LOS		E			E			E		E	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 157.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 65.6	Intersection LOS: E
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	814	30	566	1401	482	54	482	275	558	800	376
Future Volume (veh/h)	321	814	30	566	1401	482	54	482	275	558	800	376
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	885	33	615	1523	524	59	524	299	607	870	409
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	1154	402	655	1629	769	95	553	315	573	1392	774
Arrive On Green	0.10	0.23	0.23	0.19	0.32	0.32	0.03	0.25	0.25	0.17	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2182	1242	3456	3554	1585
Grp Volume(v), veh/h	349	885	33	615	1523	524	59	427	396	607	870	409
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1647	1728	1777	1585
Q Serve(g_s), s	15.3	25.7	2.5	27.8	45.9	40.3	2.7	37.4	37.5	26.3	31.3	28.2
Cycle Q Clear(g_c), s	15.3	25.7	2.5	27.8	45.9	40.3	2.7	37.4	37.5	26.3	31.3	28.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	333	1154	402	655	1629	769	95	450	417	573	1392	774
V/C Ratio(X)	1.05	0.77	0.08	0.94	0.93	0.68	0.62	0.95	0.95	1.06	0.62	0.53
Avail Cap(c_a), veh/h	333	1159	403	665	1649	775	129	459	426	573	1392	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	57.5	45.1	63.3	52.4	31.4	76.3	58.2	58.2	66.1	38.8	28.0
Incr Delay (d2), s/veh	62.0	3.1	0.1	21.1	10.3	2.4	6.5	28.9	30.9	54.2	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	11.5	1.0	14.2	21.2	16.0	1.3	20.4	19.2	15.9	13.9	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.6	60.6	45.2	84.4	62.7	33.8	82.8	87.0	89.1	120.3	39.7	28.7
LnGrp LOS	F	E	D	F	E	C	F	F	F	F	D	C
Approach Vol, veh/h		1267			2662			882			1886	
Approach Delay, s/veh		80.3			62.0			87.7			63.3	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.8	43.8	10.0	68.9	21.0	58.6	32.0	47.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	29.8	27.7	4.7	33.3	17.3	47.9	28.3	39.5
Green Ext Time (p_c), s	0.2	3.0	0.0	7.3	0.0	2.7	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	69.2
HCM 6th LOS	E

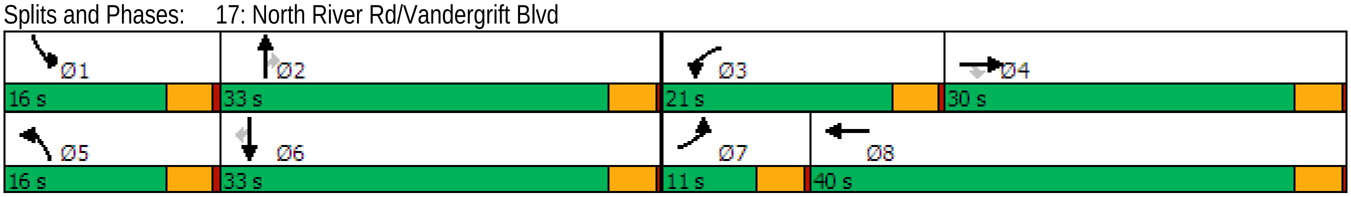
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	56	109	667	51	116	807	305	105	701	38
Future Volume (vph)	47	56	109	667	51	116	807	305	105	701	38
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	10.6	10.6	17.2	25.5	10.2	31.9	31.9	10.0	29.3	29.3
Actuated g/C Ratio	0.08	0.13	0.13	0.21	0.31	0.12	0.38	0.38	0.12	0.35	0.35
v/c Ratio	0.36	0.26	0.36	1.03	0.49	0.58	0.45	0.41	0.54	0.61	0.06
Control Delay	46.8	34.8	6.9	76.3	8.0	47.5	22.4	4.7	46.1	26.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	34.8	6.9	76.3	8.0	47.5	22.4	4.7	46.1	26.4	0.2
LOS	D	C	A	E	A	D	C	A	D	C	A
Approach Delay		23.1			54.4		20.3			27.7	
Approach LOS		C			D		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 83.5	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	56	109	667	51	265	116	807	305	105	701	38
Future Volume (veh/h)	47	56	109	667	51	265	116	807	305	105	701	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	61	118	725	55	288	126	877	332	114	762	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	198	168	762	74	386	161	1961	609	146	1337	596
Arrive On Green	0.04	0.11	0.11	0.22	0.28	0.28	0.09	0.38	0.38	0.08	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	3456	261	1364	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	51	61	118	725	0	343	126	877	332	114	762	41
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1625	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	2.2	2.3	5.5	16.0	0.0	14.8	5.3	9.8	12.6	4.8	13.1	1.3
Cycle Q Clear(g_c), s	2.2	2.3	5.5	16.0	0.0	14.8	5.3	9.8	12.6	4.8	13.1	1.3
Prop In Lane	1.00		1.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	198	168	762	0	460	161	1961	609	146	1337	596
V/C Ratio(X)	0.66	0.31	0.70	0.95	0.00	0.75	0.78	0.45	0.55	0.78	0.57	0.07
Avail Cap(c_a), veh/h	162	631	534	762	0	759	277	1961	609	277	1337	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	31.9	33.3	29.6	0.0	25.1	34.3	17.7	18.5	34.7	19.1	15.4
Incr Delay (d2), s/veh	9.4	0.9	5.3	21.6	0.0	2.4	8.1	0.7	3.5	8.6	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	2.3	8.6	0.0	5.7	2.6	3.8	4.9	2.4	5.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	32.7	38.6	51.2	0.0	27.5	42.5	18.4	22.0	43.3	20.9	15.6
LnGrp LOS	D	C	D	D	A	C	D	B	C	D	C	B
Approach Vol, veh/h		230			1068			1335			917	
Approach Delay, s/veh		38.6			43.6			21.6			23.4	
Approach LOS		D			D			C			C	

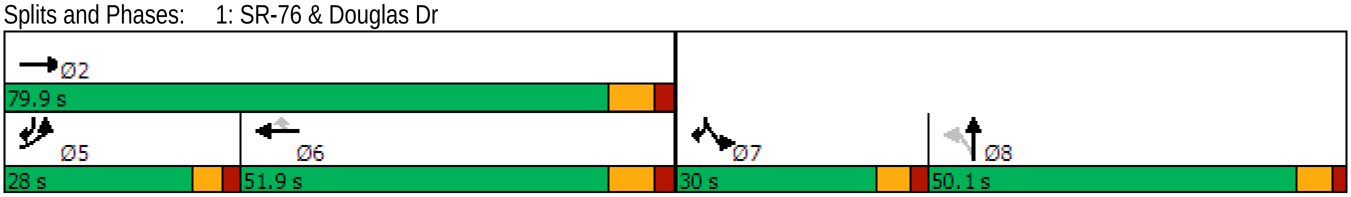
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.6	21.0	12.2	11.0	33.0	7.3	25.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	6.8	14.6	18.0	7.5	7.3	15.1	4.2	16.8
Green Ext Time (p_c), s	0.1	6.4	0.0	0.6	0.1	4.6	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	541	1768	1158	264	287	385	
Future Volume (vph)	541	1768	1158	264	287	385	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	79.9	51.9	51.9	30.0		50.1
Total Split (%)	17.5%	49.9%	32.4%	32.4%	18.8%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	71.9	43.9	43.9	23.9	52.3	
Actuated g/C Ratio	0.20	0.65	0.40	0.40	0.22	0.48	
v/c Ratio	0.84	0.83	0.89	0.36	0.81	0.27	
Control Delay	54.7	18.5	40.1	3.9	58.7	2.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.7	18.5	40.1	3.9	58.7	2.0	
LOS	D	B	D	A	E	A	
Approach Delay		27.0	33.4				
Approach LOS		C	C				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	541	1768	0	0	1158	264	0	0	0	287	0	385
Future Volume (veh/h)	541	1768	0	0	1158	264	0	0	0	287	0	385
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	588	1922	0	0	1259	287	0	0	0	312	0	418
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	681	2343	0	0	1436	641	0	2	0	351	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.20	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	312	
Grp Volume(v), veh/h	588	1922	0	0	1259	287	0	0	0	312	55.5	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	16.1	39.3	0.0	0.0	32.0	12.9	0.0	0.0	0.0	16.7		
Cycle Q Clear(g_c), s	16.1	39.3	0.0	0.0	32.0	12.9	0.0	0.0	0.0	16.7		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	681	2343	0	0	1436	641	0	2	0	351		
V/C Ratio(X)	0.86	0.82	0.00	0.00	0.88	0.45	0.00	0.00	0.00	0.89		
Avail Cap(c_a), veh/h	786	2607	0	0	1592	710	0	840	0	434		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	38.1	12.4	0.0	0.0	27.0	21.3	0.0	0.0	0.0	38.3		
Incr Delay (d2), s/veh	8.9	2.0	0.0	0.0	5.5	0.5	0.0	0.0	0.0	17.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.6	14.0	0.0	0.0	14.1	4.8	0.0	0.0	0.0	8.9		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	14.4	0.0	0.0	32.4	21.7	0.0	0.0	0.0	55.5		
LnGrp LOS	D	B	A	A	C	C	A	A	A	E		
Approach Vol, veh/h		2510			1546			0				
Approach Delay, s/veh		22.0			30.4			0.0				
Approach LOS		C			C							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		72.6			25.0	47.6	25.4	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		71.9			* 22	43.9	23.9	44.0				
Max Q Clear Time (g_c+I1), s		41.3			18.1	34.0	18.7	0.0				
Green Ext Time (p_c), s		14.9			1.2	5.6	0.6	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			27.4									
HCM 6th LOS			C									

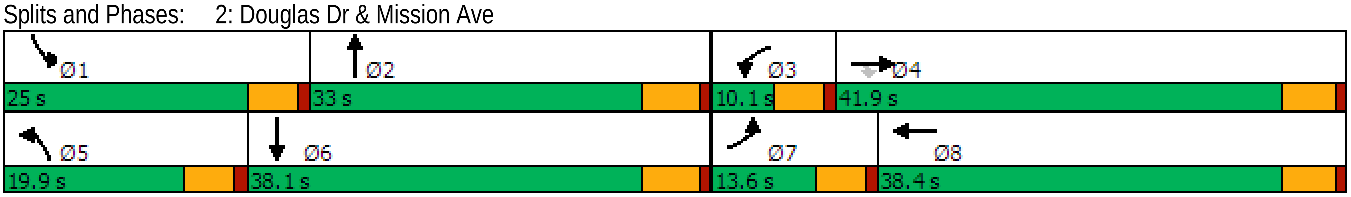
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	237	644	148	61	353	165	604	306	507
Future Volume (vph)	237	644	148	61	353	165	604	306	507
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.6	41.9	41.9	10.1	38.4	19.9	33.0	25.0	38.1
Total Split (%)	12.4%	38.1%	38.1%	9.2%	34.9%	18.1%	30.0%	22.7%	34.6%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	27.0	27.0	5.1	23.5	13.4	23.0	20.2	29.8
Actuated g/C Ratio	0.09	0.28	0.28	0.05	0.24	0.14	0.24	0.21	0.31
v/c Ratio	0.85	0.71	0.30	0.72	0.81	0.73	0.82	0.90	0.56
Control Delay	70.6	35.8	7.9	88.3	30.4	60.3	44.1	69.0	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	35.8	7.9	88.3	30.4	60.3	44.1	69.0	31.1
LOS	E	D	A	F	C	E	D	E	C
Approach Delay		39.8			34.8		47.5		44.5
Approach LOS		D			C		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 96.9	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	644	148	61	353	375	165	604	25	306	507	51
Future Volume (veh/h)	237	644	148	61	353	375	165	604	25	306	507	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	258	700	161	66	384	408	179	657	27	333	551	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1150	513	85	510	455	213	762	31	352	968	96
Arrive On Green	0.08	0.32	0.32	0.05	0.29	0.29	0.12	0.22	0.22	0.20	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3479	143	1781	3264	325
Grp Volume(v), veh/h	258	700	161	66	384	408	179	335	349	333	299	307
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1845	1781	1777	1812
Q Serve(g_s), s	7.4	16.7	7.7	3.7	19.8	24.9	9.9	18.3	18.3	18.6	14.4	14.4
Cycle Q Clear(g_c), s	7.4	16.7	7.7	3.7	19.8	24.9	9.9	18.3	18.3	18.6	14.4	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	292	1150	513	85	510	455	213	389	404	352	527	537
V/C Ratio(X)	0.89	0.61	0.31	0.78	0.75	0.90	0.84	0.86	0.86	0.95	0.57	0.57
Avail Cap(c_a), veh/h	292	1287	574	88	582	519	262	480	498	352	570	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	28.7	25.7	47.5	32.7	34.5	43.4	37.9	37.9	39.9	30.0	30.0
Incr Delay (d2), s/veh	26.0	0.7	0.3	33.7	4.8	16.9	17.8	12.7	12.4	34.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	7.1	2.9	2.4	9.0	11.5	5.4	9.2	9.6	11.4	6.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.6	29.4	26.0	81.1	37.5	51.4	61.2	50.6	50.3	74.2	31.1	31.2
LnGrp LOS	E	C	C	F	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1119			858			863			939	
Approach Delay, s/veh		38.6			47.5			52.7			46.4	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	27.9	9.9	38.0	17.2	35.7	13.6	34.3				
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4				
Max Green Setting (Gmax), s	19.9	27.2	5.0	36.5	14.8	32.3	8.5	33.0				
Max Q Clear Time (g_c+I1), s	20.6	20.3	5.7	18.7	11.9	16.4	9.4	26.9				
Green Ext Time (p_c), s	0.0	1.7	0.0	4.0	0.2	2.3	0.0	2.0				

Intersection Summary			
HCM 6th Ctrl Delay			45.8
HCM 6th LOS			D

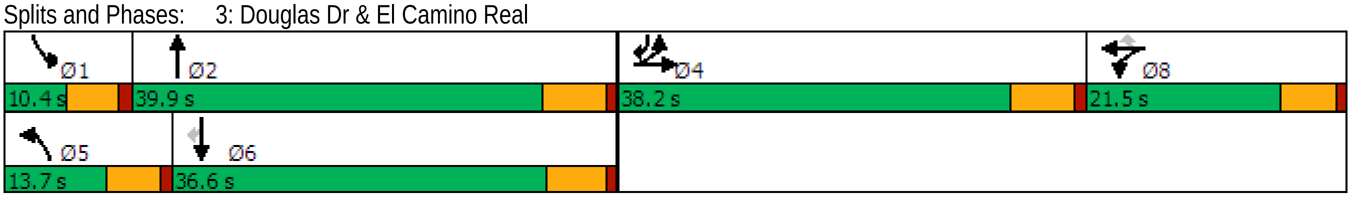
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1010	63	71	25	10	90	1018	7	716	621
Future Volume (vph)	1010	63	71	25	10	90	1018	7	716	621
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	38.2	38.2		21.5	21.5	13.7	39.9	10.4	36.6	38.2
Total Split (%)	34.7%	34.7%		19.5%	19.5%	12.5%	36.3%	9.5%	33.3%	34.7%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	32.4	32.4	98.1	10.1	10.1	8.1	38.5	5.1	26.9	65.5
Actuated g/C Ratio	0.33	0.33	1.00	0.10	0.10	0.08	0.39	0.05	0.27	0.67
v/c Ratio	0.97	0.11	0.05	0.46	0.04	0.67	0.85	0.09	0.80	0.36
Control Delay	54.8	27.1	0.1	51.9	0.2	69.5	36.0	51.0	41.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	27.1	0.1	51.9	0.2	69.5	36.0	51.0	41.0	8.7
LOS	D	C	A	D	A	E	D	D	D	A
Approach Delay		49.9		46.0			38.6		26.1	
Approach LOS		D		D			D		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 98.1	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1010	63	71	54	25	10	90	1018	64	7	716	621
Future Volume (veh/h)	1010	63	71	54	25	10	90	1018	64	7	716	621
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1098	68	0	59	27	11	98	1107	70	8	778	675
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1155	625		80	36	102	124	1178	74	18	1020	1733
Arrive On Green	0.33	0.33	0.00	0.06	0.06	0.06	0.07	0.35	0.35	0.01	0.29	0.29
Sat Flow, veh/h	3456	1870	1585	1241	568	1585	1781	3394	215	1781	3554	2790
Grp Volume(v), veh/h	1098	68	0	86	0	11	98	579	598	8	778	675
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1808	0	1585	1781	1777	1832	1781	1777	1395
Q Serve(g_s), s	29.5	2.4	0.0	4.5	0.0	0.6	5.2	30.1	30.1	0.4	19.0	11.5
Cycle Q Clear(g_c), s	29.5	2.4	0.0	4.5	0.0	0.6	5.2	30.1	30.1	0.4	19.0	11.5
Prop In Lane	1.00		1.00	0.69		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	1155	625		116	0	102	124	616	636	18	1020	1733
V/C Ratio(X)	0.95	0.11		0.74	0.00	0.11	0.79	0.94	0.94	0.45	0.76	0.39
Avail Cap(c_a), veh/h	1161	628		304	0	266	155	629	648	93	1141	1828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	21.9	0.0	43.8	0.0	42.0	43.6	30.1	30.2	46.9	31.0	9.0
Incr Delay (d2), s/veh	16.0	0.1	0.0	8.9	0.0	0.5	19.0	22.0	21.7	16.6	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	1.1	0.0	2.3	0.0	0.3	2.9	16.2	16.6	0.3	8.4	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	22.0	0.0	52.7	0.0	42.5	62.6	52.2	51.9	63.5	33.7	9.2
LnGrp LOS	D	C		D	A	D	E	D	D	E	C	A
Approach Vol, veh/h		1166	A		97			1275			1461	
Approach Delay, s/veh		45.5			51.5			52.8			22.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	39.3		38.0	12.0	33.6		11.6
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	33.7		32.0	8.3	* 31		16.0
Max Q Clear Time (g_c+I1), s	2.4	32.1		31.5	7.2	21.0		6.5
Green Ext Time (p_c), s	0.0	0.9		0.3	0.0	5.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

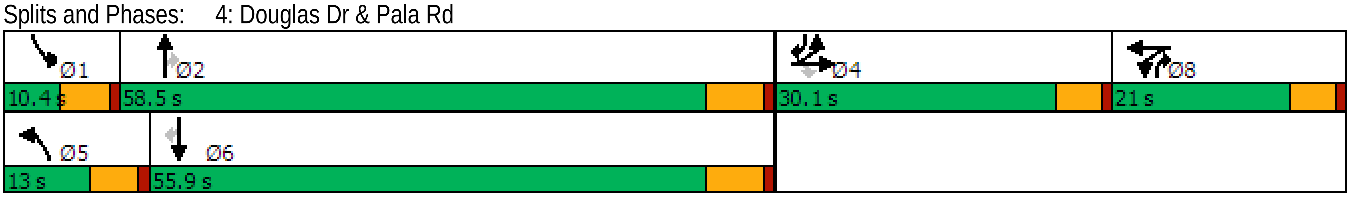
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	1	95	14	3	95	1832	22	21	1234	100
Future Volume (vph)	94	1	95	14	3	95	1832	22	21	1234	100
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	13.0	58.5	21.0	10.4	55.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.8%	48.8%	17.5%	8.7%	46.6%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.6	10.6	10.6	6.7	6.7	7.9	54.4	60.4	5.2	44.5	61.5
Actuated g/C Ratio	0.12	0.12	0.12	0.08	0.08	0.09	0.63	0.70	0.06	0.51	0.71
v/c Ratio	0.26	0.24	0.34	0.11	0.19	0.64	0.90	0.02	0.22	0.74	0.09
Control Delay	39.8	39.3	7.7	46.2	22.8	62.6	24.9	0.0	51.3	21.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	39.3	7.7	46.2	22.8	62.6	24.9	0.0	51.3	21.7	1.2
LOS	D	D	A	D	C	E	C	A	D	C	A
Approach Delay		23.6			30.8		26.4			20.6	
Approach LOS		C			C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	95	14	3	24	95	1832	22	21	1234	100
Future Volume (veh/h)	94	1	95	14	3	24	95	1832	22	21	1234	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	0	103	15	3	26	103	1991	24	23	1341	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	335	0	149	80	7	65	131	2090	1003	44	1916	1003
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.07	0.59	0.59	0.02	0.54	0.54
Sat Flow, veh/h	3563	0	1585	1781	167	1444	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	103	0	103	15	0	29	103	1991	24	23	1341	109
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1610	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.4	0.0	5.5	0.7	0.0	1.5	5.0	46.0	0.5	1.1	24.5	2.4
Cycle Q Clear(g_c), s	2.4	0.0	5.5	0.7	0.0	1.5	5.0	46.0	0.5	1.1	24.5	2.4
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	0	149	80	0	72	131	2090	1003	44	1916	1003
V/C Ratio(X)	0.31	0.00	0.69	0.19	0.00	0.40	0.79	0.95	0.02	0.53	0.70	0.11
Avail Cap(c_a), veh/h	1016	0	452	323	0	292	154	2119	1017	102	2014	1047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	38.5	40.3	0.0	40.7	40.0	16.9	6.0	42.3	15.0	6.3
Incr Delay (d2), s/veh	0.5	0.0	5.6	1.1	0.0	3.5	20.2	10.5	0.0	9.6	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.3	0.3	0.0	0.7	2.9	19.3	0.2	0.6	9.3	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	44.1	41.4	0.0	44.3	60.2	27.5	6.0	51.8	16.0	6.4
LnGrp LOS	D	A	D	D	A	D	E	C	A	D	B	A
Approach Vol, veh/h		206			44			2118			1473	
Approach Delay, s/veh		40.9			43.3			28.8			15.8	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	57.8		13.3	11.8	53.5		9.0
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.0	52.3		25.0	7.6	49.7		15.9
Max Q Clear Time (g_c+I1), s	3.1	48.0		7.5	7.0	26.5		3.5
Green Ext Time (p_c), s	0.0	3.5		0.8	0.0	8.5		0.1

Intersection Summary			
HCM 6th Ctrl Delay			24.6
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	2	73	43	2	4	1764	82	4	1178	73
Future Volume (vph)	8	2	73	43	2	4	1764	82	4	1178	73
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		11.2	11.2		11.2	11.2	55.9	55.9	5.1	57.5	57.5
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.73	0.73	0.07	0.75	0.75
v/c Ratio		0.05	0.25		0.25	0.01	0.74	0.08	0.03	0.48	0.07
Control Delay		25.3	5.8		29.8	0.0	13.9	3.6	38.5	7.2	4.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.3	5.8		29.8	0.0	13.9	3.6	38.5	7.2	4.3
LOS		C	A		C	A	B	A	D	A	A
Approach Delay		8.2			27.6		13.5			7.1	
Approach LOS		A			C		B			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 76.4

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

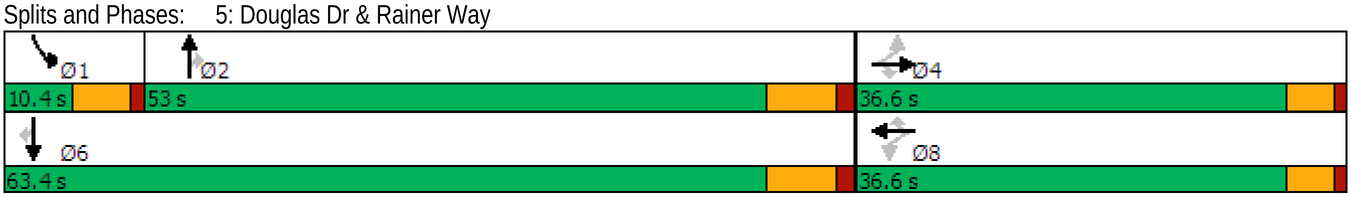
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 11.1 Intersection LOS: B

Intersection Capacity Utilization 72.0% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Douglas Dr & Rainer Way



LOS Engineering, Inc.

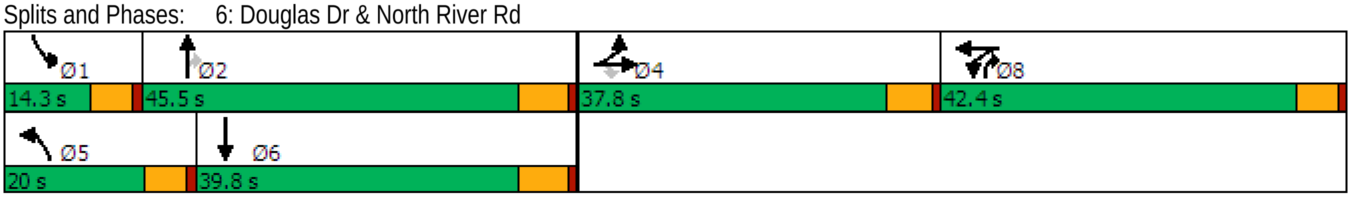
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	43	2	4	0	1764	82	4	1178	73
Future Volume (veh/h)	8	2	73	43	2	4	0	1764	82	4	1178	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	2	79	47	2	4	0	1917	89	4	1280	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	88	12	380	103	3	380	0	1968	878	9	2218	989
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.00	0.55	0.55	0.01	0.62	0.62
Sat Flow, veh/h	39	50	1585	73	11	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	11	0	79	49	0	4	0	1917	89	4	1280	79
Grp Sat Flow(s),veh/h/ln	89	0	1585	85	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	0.0	3.3	1.1	0.0	0.2	0.0	43.3	2.2	0.2	17.5	1.6
Cycle Q Clear(g_c), s	19.4	0.0	3.3	19.9	0.0	0.2	0.0	43.3	2.2	0.2	17.5	1.6
Prop In Lane	0.82		1.00	0.96		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	0	380	105	0	380	0	1968	878	9	2218	989
V/C Ratio(X)	0.11	0.00	0.21	0.47	0.00	0.01	0.00	0.97	0.10	0.43	0.58	0.08
Avail Cap(c_a), veh/h	317	0	612	301	0	612	0	1985	885	107	2431	1084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	25.2	40.5	0.0	24.0	0.0	17.9	8.7	41.1	9.1	6.2
Incr Delay (d2), s/veh	0.5	0.0	0.3	3.2	0.0	0.0	0.0	14.5	0.0	28.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.1	0.0	0.1	0.0	19.3	0.7	0.2	5.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	25.5	43.6	0.0	24.0	0.0	32.4	8.8	69.7	9.4	6.2
LnGrp LOS	C	A	C	D	A	C	A	C	A	E	A	A
Approach Vol, veh/h		90			53			2006			1363	
Approach Delay, s/veh		25.6			42.2			31.4			9.4	
Approach LOS		C			D			C			A	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.8	52.7		25.1		58.6		25.1				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.2	45.3		21.4		19.5		21.9				
Green Ext Time (p_c), s	0.0	0.9		0.2		8.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			22.9
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	38	94	68	560	64	147	669	861	39	572
Future Volume (vph)	38	94	68	560	64	147	669	861	39	572
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.0	45.5	42.4	14.3	39.8
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.3%	32.5%	30.3%	10.2%	28.4%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.1	13.1	13.1	33.0	33.0	14.1	38.4	73.7	7.7	29.1
Actuated g/C Ratio	0.12	0.12	0.12	0.29	0.29	0.13	0.34	0.65	0.07	0.26
v/c Ratio	0.20	0.25	0.23	0.65	0.44	0.72	0.60	0.44	0.35	0.74
Control Delay	49.2	48.2	1.7	44.1	34.9	69.7	36.3	1.1	64.1	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	48.2	1.7	44.1	34.9	69.7	36.3	1.1	64.1	45.1
LOS	D	D	A	D	C	E	D	A	E	D
Approach Delay		32.5			38.8		21.2			46.2
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 112.7	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	94	68	560	64	40	147	669	861	39	572	46
Future Volume (veh/h)	38	94	68	560	64	40	147	669	861	39	572	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	102	74	609	70	43	160	727	936	42	622	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	316	141	844	257	158	197	1362	1730	64	1030	83
Arrive On Green	0.09	0.09	0.09	0.24	0.24	0.24	0.11	0.38	0.38	0.04	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	3563	1084	666	1781	3554	2790	1781	3332	267
Grp Volume(v), veh/h	41	102	74	609	0	113	160	727	936	42	331	341
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1750	1781	1777	1395	1781	1777	1822
Q Serve(g_s), s	1.9	2.4	4.0	14.1	0.0	4.7	7.9	14.2	17.2	2.1	14.2	14.2
Cycle Q Clear(g_c), s	1.9	2.4	4.0	14.1	0.0	4.7	7.9	14.2	17.2	2.1	14.2	14.2
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	158	316	141	844	0	415	197	1362	1730	64	549	563
V/C Ratio(X)	0.26	0.32	0.52	0.72	0.00	0.27	0.81	0.53	0.54	0.65	0.60	0.60
Avail Cap(c_a), veh/h	637	1270	567	1473	0	724	291	1560	1886	177	667	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	38.2	39.0	31.4	0.0	27.9	38.9	21.4	9.7	42.6	26.3	26.3
Incr Delay (d2), s/veh	1.2	0.8	4.3	1.7	0.0	0.5	10.5	0.7	0.6	10.6	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.1	1.7	6.1	0.0	2.0	4.0	5.8	8.9	1.1	6.2	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	39.1	43.2	33.1	0.0	28.4	49.4	22.1	10.3	53.1	28.5	28.5
LnGrp LOS	D	D	D	C	A	C	D	C	B	D	C	C
Approach Vol, veh/h		217			722			1823			714	
Approach Delay, s/veh		40.5			32.4			18.4			30.0	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	40.5		13.8	15.3	33.9		26.6				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	8.9	39.3		32.0	14.6	33.6		37.0				
Max Q Clear Time (g_c+I1), s	4.1	19.2		6.0	9.9	16.2		16.1				
Green Ext Time (p_c), s	0.0	15.1		1.3	0.2	5.4		5.1				

Intersection Summary			
HCM 6th Ctrl Delay			25.1
HCM 6th LOS			C

Notes

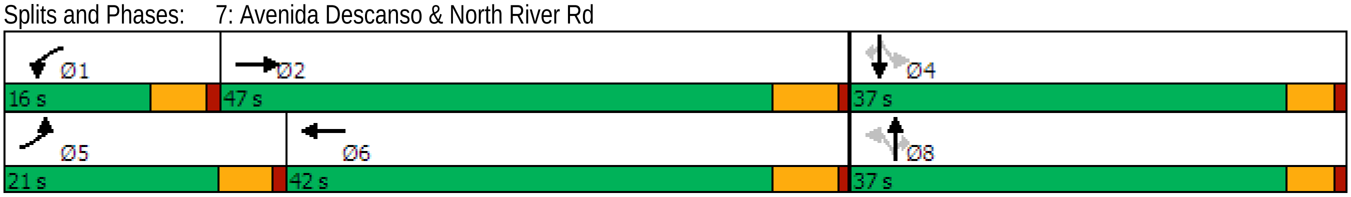
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	871	25	603	2	4	34	81	4	73
Future Volume (vph)	115	871	25	603	2	4	34	81	4	73
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	47.0	16.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	47.0%	16.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.5	27.6	7.4	19.7		12.1	12.1		12.1	12.1
Actuated g/C Ratio	0.19	0.49	0.13	0.35		0.22	0.22		0.22	0.22
v/c Ratio	0.37	0.55	0.12	0.60		0.02	0.09		0.31	0.19
Control Delay	29.1	13.5	31.6	19.0		20.5	0.4		24.2	6.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	29.1	13.5	31.6	19.0		20.5	0.4		24.2	6.2
LOS	C	B	C	B		C	A		C	A
Approach Delay		15.3		19.4		3.2			15.9	
Approach LOS		B		B		A			B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 55.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 52.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	871	12	25	603	85	2	4	34	81	4	73
Future Volume (veh/h)	115	871	12	25	603	85	2	4	34	81	4	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	947	13	27	655	92	2	4	37	88	4	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	1408	19	58	1026	144	175	234	254	397	14	254
Arrive On Green	0.10	0.39	0.39	0.03	0.33	0.33	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3589	49	1781	3129	439	290	1458	1585	1300	87	1585
Grp Volume(v), veh/h	125	469	491	27	372	375	6	0	37	92	0	79
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1791	1748	0	1585	1387	0	1585
Q Serve(g_s), s	2.5	8.1	8.1	0.6	6.6	6.7	0.0	0.0	0.8	2.1	0.0	1.6
Cycle Q Clear(g_c), s	2.5	8.1	8.1	0.6	6.6	6.7	0.1	0.0	0.8	2.2	0.0	1.6
Prop In Lane	1.00		0.03	1.00		0.25	0.33		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	173	697	730	58	583	587	409	0	254	411	0	254
V/C Ratio(X)	0.72	0.67	0.67	0.46	0.64	0.64	0.01	0.00	0.15	0.22	0.00	0.31
Avail Cap(c_a), veh/h	757	1957	2051	519	1720	1734	1566	0	1373	1387	0	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	9.4	9.4	17.8	10.7	10.7	13.2	0.0	13.5	14.1	0.0	13.9
Incr Delay (d2), s/veh	5.6	1.1	1.1	5.6	1.2	1.2	0.0	0.0	0.3	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.4	2.5	0.3	2.1	2.1	0.0	0.0	0.2	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	10.5	10.5	23.4	11.8	11.9	13.2	0.0	13.8	14.4	0.0	14.6
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1085			774			43			171	
Approach Delay, s/veh		11.8			12.3			13.7			14.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	20.5		10.6	8.7	18.1		10.6				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	10.9	41.2		32.4	15.9	36.2		32.4				
Max Q Clear Time (g_c+I1), s	2.6	10.1		4.2	4.5	8.7		2.8				
Green Ext Time (p_c), s	0.0	4.5		0.7	0.3	3.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	978	694	15	3	13
Future Vol, veh/h	21	978	694	15	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	1063	754	16	3	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	770	0	-	0	1340	385
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	578	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	840	-	-	-	144	613
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	840	-	-	-	140	613
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	524	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	840	-	-	-	375
HCM Lane V/C Ratio	0.027	-	-	-	0.046
HCM Control Delay (s)	9.4	-	-	-	15.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	949	0	0	698	12	0	0	0	19	0	8
Future Vol, veh/h	25	949	0	0	698	12	0	0	0	19	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	1032	0	0	759	13	0	0	0	21	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	1032	0	0	-	-	516	1336	1852	386
Stage 1	-	-	-	-	-	-	-	-	-	766	766	-
Stage 2	-	-	-	-	-	-	-	-	-	570	1086	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	839	-	-	669	-	-	0	0	504	112	73	612
Stage 1	-	-	-	-	-	-	0	0	-	361	410	-
Stage 2	-	-	-	-	-	-	0	0	-	474	291	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	839	-	-	669	-	-	-	-	504	109	71	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	109	71	-
Stage 1	-	-	-	-	-	-	-	-	-	349	410	-
Stage 2	-	-	-	-	-	-	-	-	-	459	282	-

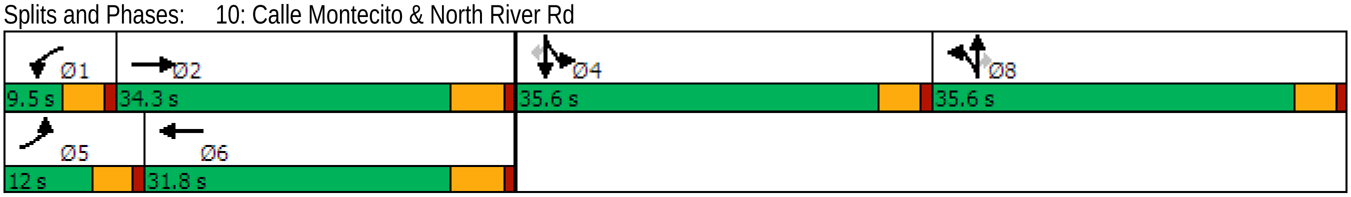
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	36.3
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	839	-	-	669	-	-	144
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.204
HCM Control Delay (s)	0	9.4	-	-	0	-	-	36.3
HCM Lane LOS	A	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.7

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	126	797	8	622	2	32	1	59
Future Volume (vph)	126	797	8	622	2	32	1	59
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.4	5.2	27.2	10.0	10.0	13.5	13.5
Actuated g/C Ratio	0.10	0.49	0.07	0.35	0.13	0.13	0.17	0.17
v/c Ratio	0.78	0.51	0.08	0.73	0.12	0.12	0.49	0.18
Control Delay	67.9	20.0	44.1	28.9	31.8	0.8	35.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	20.0	44.1	28.9	31.8	0.8	35.6	1.9
LOS	E	B	D	C	C	A	D	A
Approach Delay		26.4		29.1	14.3		25.4	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 78.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	797	10	8	622	183	23	2	32	135	1	59
Future Volume (veh/h)	126	797	10	8	622	183	23	2	32	135	1	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	866	11	9	676	199	25	2	35	147	1	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1457	19	21	862	254	177	14	170	229	2	205
Arrive On Green	0.10	0.41	0.41	0.01	0.32	0.32	0.11	0.11	0.11	0.13	0.13	0.13
Sat Flow, veh/h	1781	3593	46	1781	2707	797	1655	132	1585	1770	12	1585
Grp Volume(v), veh/h	137	428	449	9	444	431	27	0	35	148	0	64
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1727	1788	0	1585	1782	0	1585
Q Serve(g_s), s	4.2	10.6	10.6	0.3	12.7	12.7	0.8	0.0	1.1	4.4	0.0	2.1
Cycle Q Clear(g_c), s	4.2	10.6	10.6	0.3	12.7	12.7	0.8	0.0	1.1	4.4	0.0	2.1
Prop In Lane	1.00		0.02	1.00		0.46	0.93		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	175	720	755	21	566	550	192	0	170	230	0	205
V/C Ratio(X)	0.78	0.59	0.59	0.43	0.78	0.78	0.14	0.00	0.21	0.64	0.00	0.31
Avail Cap(c_a), veh/h	239	908	951	159	829	805	990	0	878	987	0	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	13.0	13.0	27.5	17.3	17.3	22.7	0.0	22.8	23.1	0.0	22.1
Incr Delay (d2), s/veh	10.9	0.8	0.8	13.6	3.0	3.1	0.3	0.0	0.6	3.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.7	3.9	0.2	5.0	4.9	0.3	0.0	0.4	1.9	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	13.8	13.8	41.1	20.4	20.5	23.0	0.0	23.4	26.1	0.0	23.0
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1014			884			62			212	
Approach Delay, s/veh		16.7			20.6			23.2			25.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	28.4		11.8	10.0	23.5		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0				
Max Q Clear Time (g_c+I1), s	2.3	12.6		6.4	6.2	14.7		3.1				
Green Ext Time (p_c), s	0.0	3.5		0.8	0.1	3.1		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			19.3
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	103	872	748	49	0		
Future Volume (vph)	103	872	748	49	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	26.0	43.4	38.4	35.6	35.6	21.0	35.6
Total Split (%)	26.0%	43.4%	38.4%	35.6%	35.6%	21%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	10.1	32.2	21.0	10.9	10.9		
Actuated g/C Ratio	0.18	0.56	0.37	0.19	0.19		
v/c Ratio	0.36	0.48	0.68	0.20	0.14		
Control Delay	29.7	8.5	20.4	24.0	0.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	29.7	8.5	20.4	24.0	0.5		
LOS	C	A	C	C	A		
Approach Delay		10.8	20.4		9.4		
Approach LOS		B	C		A		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 57.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 47.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: Redondo Dr & North River Rd

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	872	0	0	748	62	0	0	0	49	0	79
Future Volume (veh/h)	103	872	0	0	748	62	0	0	0	49	0	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	948	0	0	813	67	0	0	0	53	0	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	1959	0	4	1172	97	0	275	0	439	0	233
Arrive On Green	0.09	0.55	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3324	274	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	112	948	0	0	435	445	0	0	0	53	0	86
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1821	0	1870	0	1781	0	1585
Q Serve(g_s), s	2.5	6.7	0.0	0.0	8.5	8.5	0.0	0.0	0.0	1.1	0.0	2.0
Cycle Q Clear(g_c), s	2.5	6.7	0.0	0.0	8.5	8.5	0.0	0.0	0.0	1.1	0.0	2.0
Prop In Lane	1.00		0.00	1.00		0.15	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	1959	0	4	627	642	0	275	0	439	0	233
V/C Ratio(X)	0.71	0.48	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.12	0.00	0.37
Avail Cap(c_a), veh/h	939	3198	0	721	1381	1416	0	1422	0	1487	0	1166
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	5.6	0.0	0.0	11.3	11.3	0.0	0.0	0.0	15.3	0.0	15.7
Incr Delay (d2), s/veh	5.9	0.2	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.5	0.0	0.0	2.8	2.9	0.0	0.0	0.0	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	5.8	0.0	0.0	12.7	12.7	0.0	0.0	0.0	15.4	0.0	16.7
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		1060			880			0			139	
Approach Delay, s/veh		7.7			12.7			0.0			16.2	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	29.2		11.6	8.1	21.1		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	16.5	36.7		30.0	21.5	31.7		* 31
Max Q Clear Time (g_c+I1), s	0.0	8.7		4.0	4.5	10.5		0.0
Green Ext Time (p_c), s	0.0	5.2		0.5	0.3	3.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

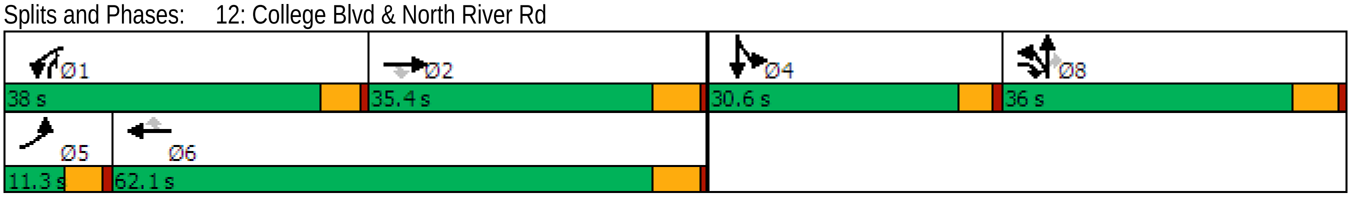
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	23	468	445	1085	402	58	30	1242	23	39
Future Volume (vph)	23	468	445	1085	402	58	30	1242	23	39
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.3	35.4	36.0	38.0	62.1	62.1	36.0	38.0	30.6	30.6
Total Split (%)	8.1%	25.3%	25.7%	27.1%	44.4%	44.4%	25.7%	27.1%	21.9%	21.9%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	21.5	53.6	33.4	53.7	53.7	30.7	70.0	10.6	10.6
Actuated g/C Ratio	0.05	0.19	0.46	0.29	0.47	0.47	0.27	0.61	0.09	0.09
v/c Ratio	0.27	0.77	0.51	1.18	0.27	0.08	0.97	0.67	0.15	0.26
Control Delay	65.3	54.0	4.6	130.8	21.6	1.7	78.6	8.7	51.3	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	54.0	4.6	130.8	21.6	1.7	78.6	8.7	51.3	51.6
LOS	E	D	A	F	C	A	E	A	D	D
Approach Delay		30.8			97.5		26.5			51.5
Approach LOS		C			F		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 115.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 53.9	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	468	445	1085	402	58	393	30	1242	23	39	2
Future Volume (veh/h)	23	468	445	1085	402	58	393	30	1242	23	39	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	509	484	1179	437	63	427	33	1350	25	42	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	866	790	958	1767	788	422	33	1483	81	80	4
Arrive On Green	0.02	0.24	0.24	0.28	0.50	0.50	0.25	0.25	0.25	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1659	128	2790	1781	1771	84
Grp Volume(v), veh/h	25	509	484	1179	437	63	460	0	1350	25	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1855
Q Serve(g_s), s	1.7	15.0	26.2	32.9	8.4	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Cycle Q Clear(g_c), s	1.7	15.0	26.2	32.9	8.4	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	42	866	790	958	1767	788	455	0	1483	81	0	84
V/C Ratio(X)	0.59	0.59	0.61	1.23	0.25	0.08	1.01	0.00	0.91	0.31	0.00	0.52
Avail Cap(c_a), veh/h	93	886	798	958	1767	788	455	0	1483	390	0	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.4	39.6	21.5	42.9	17.1	15.6	44.3	0.0	25.3	54.9	0.0	55.4
Incr Delay (d2), s/veh	12.6	1.0	1.4	113.2	0.1	0.0	45.2	0.0	8.7	2.1	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.7	14.9	28.9	3.4	0.9	18.9	0.0	18.2	0.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	40.6	22.9	156.2	17.2	15.7	89.4	0.0	34.0	57.0	0.0	60.4
LnGrp LOS	E	D	C	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		1018			1679			1810			69	
Approach Delay, s/veh		32.9			114.7			48.1			59.2	
Approach LOS		C			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	34.7		10.0	7.9	64.8		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	32.9	29.6		26.0	6.2	56.3		30.2				
Max Q Clear Time (g_c+I1), s	34.9	28.2		4.8	3.7	10.4		32.2				
Green Ext Time (p_c), s	0.0	0.8		0.2	0.0	2.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			69.3									
HCM 6th LOS			E									

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	80	95	1680	1440	55
Future Volume (vph)	28	80	95	1680	1440	55
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.1	6.9	56.3	40.6	40.6
Actuated g/C Ratio	0.17	0.24	0.10	0.82	0.59	0.59
v/c Ratio	0.10	0.23	0.30	0.63	0.75	0.06
Control Delay	28.8	18.9	37.4	7.7	15.5	6.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	28.8	18.9	37.4	7.8	15.5	6.0
LOS	C	B	D	A	B	A
Approach Delay	21.4			9.4	15.2	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 68.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 12.3 — Intersection LOS: B
Intersection Capacity Utilization 61.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	80	95	1680	1440	55
Future Volume (veh/h)	28	80	95	1680	1440	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	87	103	1826	1565	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	200	306	279	2555	1974	880
Arrive On Green	0.11	0.11	0.08	0.72	0.56	0.56
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	30	87	103	1826	1565	60
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	0.9	2.9	1.7	18.3	21.6	1.1
Cycle Q Clear(g_c), s	0.9	2.9	1.7	18.3	21.6	1.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	200	306	279	2555	1974	880
V/C Ratio(X)	0.15	0.28	0.37	0.71	0.79	0.07
Avail Cap(c_a), veh/h	810	848	365	3553	2884	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	21.2	26.8	5.0	10.9	6.3
Incr Delay (d2), s/veh	0.3	0.5	0.8	0.4	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.7	3.8	6.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.0	21.7	27.6	5.4	11.9	6.4
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	117			1929	1625	
Approach Delay, s/veh	22.6			6.6	11.7	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		50.1		11.5	10.1	40.0
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		20.3		4.9	3.7	23.6
Green Ext Time (p_c), s		15.4		0.4	0.1	10.7

Intersection Summary			
HCM 6th Ctrl Delay			9.4
HCM 6th LOS			A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	20	49	10	30	74	1580	40	1401	116
Future Volume (vph)	147	20	49	10	30	74	1580	40	1401	116
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	12.0	51.5	11.8	51.3	51.3
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.0%	51.5%	11.8%	51.3%	51.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.5	16.5		16.5	16.5	7.0	45.6	6.6	43.0	43.0
Actuated g/C Ratio	0.21	0.21		0.21	0.21	0.09	0.57	0.08	0.54	0.54
v/c Ratio	0.58	0.25		0.23	0.08	0.51	0.62	0.29	0.80	0.14
Control Delay	38.3	11.2		29.2	0.4	52.8	14.7	45.4	21.2	6.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	38.3	11.2		29.2	0.4	52.8	14.7	45.4	21.3	6.6
LOS	D	B		C	A	D	B	D	C	A
Approach Delay		27.8		19.4			16.3		20.9	
Approach LOS		C		B			B		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 79.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 70.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	20	73	49	10	30	74	1580	83	40	1401	116
Future Volume (veh/h)	147	20	73	49	10	30	74	1580	83	40	1401	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	22	79	53	11	33	80	1717	90	43	1523	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	84	300	294	53	371	103	2596	136	70	1791	799
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.06	0.52	0.52	0.04	0.50	0.50
Sat Flow, veh/h	1362	357	1282	889	228	1585	1781	4967	260	1781	3554	1585
Grp Volume(v), veh/h	160	0	101	64	0	33	80	1176	631	43	1523	126
Grp Sat Flow(s),veh/h/ln	1362	0	1640	1117	0	1585	1781	1702	1824	1781	1777	1585
Q Serve(g_s), s	8.6	0.0	3.8	2.5	0.0	1.2	3.4	19.2	19.3	1.8	28.4	3.3
Cycle Q Clear(g_c), s	14.9	0.0	3.8	6.3	0.0	1.2	3.4	19.2	19.3	1.8	28.4	3.3
Prop In Lane	1.00		0.78	0.83		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	300	0	383	347	0	371	103	1779	953	70	1791	799
V/C Ratio(X)	0.53	0.00	0.26	0.18	0.00	0.09	0.78	0.66	0.66	0.62	0.85	0.16
Avail Cap(c_a), veh/h	553	0	687	601	0	665	161	2039	1092	156	2119	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	23.9	25.7	0.0	22.9	35.5	13.3	13.3	36.1	16.4	10.2
Incr Delay (d2), s/veh	1.5	0.0	0.4	0.3	0.0	0.1	11.7	0.7	1.2	8.5	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.5	1.0	0.0	0.5	1.8	6.7	7.3	0.9	10.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	0.0	24.2	25.9	0.0	23.0	47.2	14.0	14.5	44.6	19.5	10.3
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	B	B
Approach Vol, veh/h		261			97			1887			1692	
Approach Delay, s/veh		29.4			24.9			15.6			19.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	45.7		22.5	9.5	44.2		22.5				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.7	45.7		* 32	6.9	45.5		* 32				
Max Q Clear Time (g_c+I1), s	3.8	21.3		16.9	5.4	30.4		8.3				
Green Ext Time (p_c), s	0.0	10.7		0.9	0.0	8.1		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			18.4
HCM 6th LOS			B

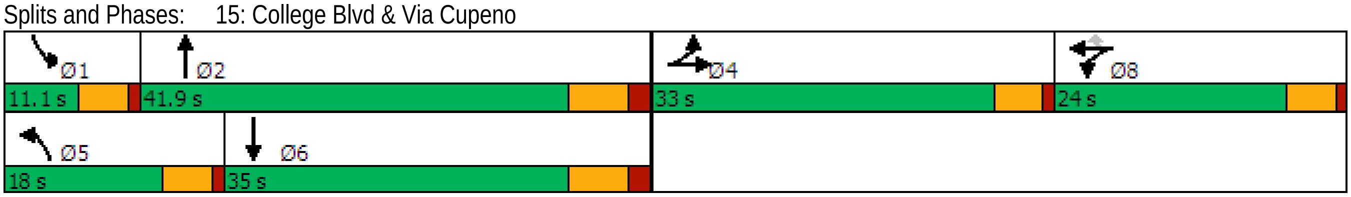
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	10	6	433	1499	2	1286
Future Volume (vph)	9	10	6	433	1499	2	1286
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	18.0	41.9	11.1	35.0
Total Split (%)	30.0%	21.8%	21.8%	16.4%	38.1%	10.1%	31.8%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	16.7	9.4	9.4	13.2	45.3	6.1	28.8
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.52	0.07	0.33
v/c Ratio	0.71	0.42	0.02	0.91	0.67	0.02	0.92
Control Delay	29.8	46.0	0.2	63.0	20.7	44.0	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	46.0	0.2	63.0	20.7	44.0	40.6
LOS	C	D	A	E	C	D	D
Approach Delay	29.8	42.3			29.7		40.6
Approach LOS	C	D			C		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 87.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	9	191	63	10	6	433	1499	101	2	1286	119
Future Volume (veh/h)	276	9	191	63	10	6	433	1499	101	2	1286	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	300	10	208	68	11	7	471	1629	110	2	1398	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	15	314	93	15	95	525	2309	156	6	1541	142
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.15	0.47	0.47	0.00	0.32	0.32
Sat Flow, veh/h	1781	73	1523	1543	250	1585	3456	4885	330	1781	4757	439
Grp Volume(v), veh/h	300	0	218	79	0	7	471	1135	604	2	1000	527
Grp Sat Flow(s),veh/h/ln	1781	0	1596	1793	0	1585	1728	1702	1811	1781	1702	1791
Q Serve(g_s), s	13.7	0.0	10.7	3.7	0.0	0.4	11.4	22.4	22.4	0.1	23.9	23.9
Cycle Q Clear(g_c), s	13.7	0.0	10.7	3.7	0.0	0.4	11.4	22.4	22.4	0.1	23.9	23.9
Prop In Lane	1.00		0.95	0.86		1.00	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	367	0	329	108	0	95	525	1609	856	6	1103	580
V/C Ratio(X)	0.82	0.00	0.66	0.73	0.00	0.07	0.90	0.71	0.71	0.34	0.91	0.91
Avail Cap(c_a), veh/h	587	0	526	401	0	355	525	1609	856	126	1131	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	31.0	39.2	0.0	37.7	35.3	17.7	17.7	42.2	27.5	27.5
Incr Delay (d2), s/veh	4.8	0.0	2.3	9.3	0.0	0.3	18.0	1.4	2.7	31.9	10.4	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	4.2	1.9	0.0	0.1	6.0	8.4	9.3	0.1	10.8	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	0.0	33.3	48.5	0.0	38.0	53.4	19.1	20.4	74.1	37.9	45.0
LnGrp LOS	D	A	C	D	A	D	D	B	C	E	D	D
Approach Vol, veh/h		518			86			2210			1529	
Approach Delay, s/veh		35.4			47.6			26.8			40.4	
Approach LOS		D			D			C			D	

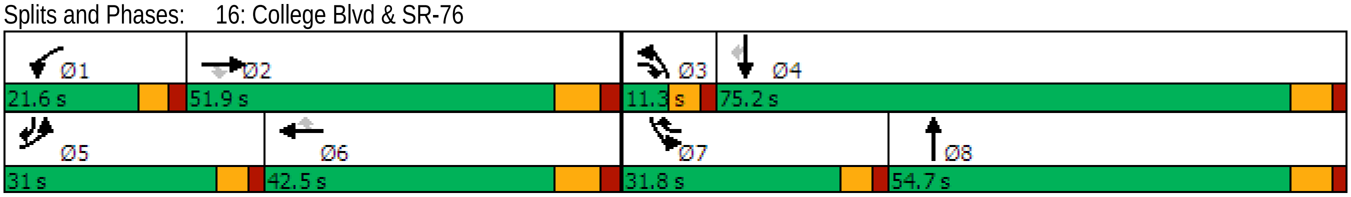
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	46.9		22.5	18.0	34.3		10.1				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	35.1		28.0	12.9	28.2		19.0				
Max Q Clear Time (g_c+I1), s	2.1	24.4		15.7	13.4	25.9		5.7				
Green Ext Time (p_c), s	0.0	6.3		1.8	0.0	1.6		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			33.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	565	1357	58	332	928	648	51	796	563	768	443
Future Volume (vph)	565	1357	58	332	928	648	51	796	563	768	443
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	31.0	51.9	11.3	21.6	42.5	31.8	11.3	54.7	31.8	75.2	31.0
Total Split (%)	19.4%	32.4%	7.1%	13.5%	26.6%	19.9%	7.1%	34.2%	19.9%	47.0%	19.4%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	25.3	43.9	57.5	15.9	34.5	68.6	5.6	47.9	26.1	68.4	100.5
Actuated g/C Ratio	0.16	0.27	0.36	0.10	0.22	0.43	0.04	0.30	0.16	0.43	0.63
v/c Ratio	1.13	1.06	0.10	1.06	0.92	0.95	0.46	1.21	1.09	0.55	0.47
Control Delay	139.0	95.4	1.1	131.3	75.0	61.1	88.2	149.8	125.9	36.0	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.0	95.4	1.1	131.3	75.0	61.1	88.2	149.8	125.9	36.0	14.8
LOS	F	F	A	F	E	E	F	F	F	D	B
Approach Delay		105.1			80.1			147.2		59.2	
Approach LOS		F			F			F		E	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 93.8	Intersection LOS: F
Intersection Capacity Utilization 107.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	565	1357	58	332	928	648	51	796	368	563	768	443
Future Volume (veh/h)	565	1357	58	332	928	648	51	796	368	563	768	443
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	614	1475	63	361	1009	704	55	865	400	612	835	482
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1401	476	343	1101	600	89	708	325	564	1552	943
Arrive On Green	0.16	0.27	0.27	0.10	0.22	0.22	0.03	0.30	0.30	0.16	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2366	1086	3456	3554	1585
Grp Volume(v), veh/h	614	1475	63	361	1009	704	55	648	617	612	835	482
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1675	1728	1777	1585
Q Serve(g_s), s	25.3	43.9	4.6	15.9	30.9	34.5	2.5	47.9	47.9	26.1	27.7	28.3
Cycle Q Clear(g_c), s	25.3	43.9	4.6	15.9	30.9	34.5	2.5	47.9	47.9	26.1	27.7	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	546	1401	476	343	1101	600	89	532	501	564	1552	943
V/C Ratio(X)	1.12	1.05	0.13	1.05	0.92	1.17	0.62	1.22	1.23	1.09	0.54	0.51
Avail Cap(c_a), veh/h	546	1401	476	343	1101	600	121	532	501	564	1552	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	58.0	40.8	72.1	61.3	49.7	77.1	56.0	56.1	66.9	33.2	18.9
Incr Delay (d2), s/veh	77.2	39.3	0.1	62.6	11.8	94.5	6.7	114.5	120.1	63.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	24.0	1.9	10.1	14.6	39.6	1.2	38.4	36.9	16.5	12.2	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.6	97.3	40.9	134.7	73.2	144.2	83.8	170.6	176.2	130.2	33.6	19.3
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	C	B
Approach Vol, veh/h		2152			2074			1320			1929	
Approach Delay, s/veh		109.2			108.0			169.6			60.7	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	51.9	9.8	76.7	31.0	42.5	31.8	54.7
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 16	43.9	* 5.6	68.4	* 25	34.5	* 26	47.9
Max Q Clear Time (g_c+I1), s	17.9	45.9	4.5	30.3	27.3	36.5	28.1	49.9
Green Ext Time (p_c), s	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	107.0
HCM 6th LOS	F

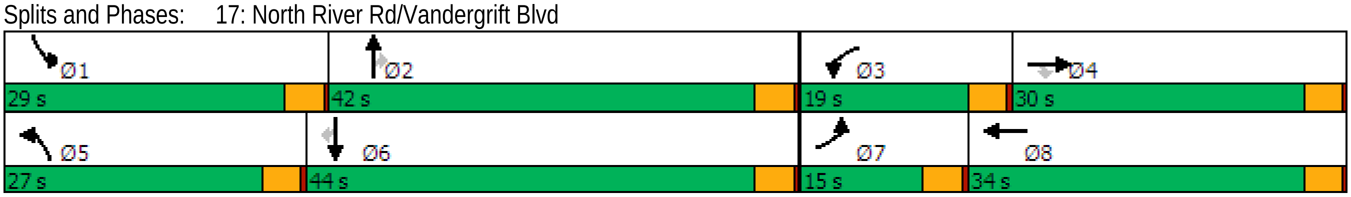
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	87	121	466	106	225	684	752	253	882	53
Future Volume (vph)	70	87	121	466	106	225	684	752	253	882	53
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	15.0	30.0	30.0	19.0	34.0	27.0	42.0	42.0	29.0	44.0	44.0
Total Split (%)	12.5%	25.0%	25.0%	15.8%	28.3%	22.5%	35.0%	35.0%	24.2%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.2	13.5	13.5	15.2	21.9	18.7	38.7	38.7	20.4	40.4	40.4
Actuated g/C Ratio	0.09	0.13	0.13	0.15	0.21	0.18	0.37	0.37	0.20	0.39	0.39
v/c Ratio	0.49	0.39	0.41	1.01	0.59	0.77	0.39	0.88	0.79	0.70	0.09
Control Delay	58.7	46.1	10.9	89.3	38.7	58.5	26.3	23.2	57.9	31.7	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	46.1	10.9	89.3	38.7	58.5	26.3	23.2	57.9	31.7	3.0
LOS	E	D	B	F	D	E	C	C	E	C	A
Approach Delay		34.0			73.4		29.3			36.0	
Approach LOS		C			E		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	87	121	466	106	109	225	684	752	253	882	53
Future Volume (veh/h)	70	87	121	466	106	109	225	684	752	253	882	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	95	132	507	115	118	245	743	817	275	959	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	205	174	534	177	181	283	2015	626	314	1464	653
Arrive On Green	0.06	0.11	0.11	0.15	0.21	0.21	0.16	0.39	0.39	0.18	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	3456	846	868	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	76	95	132	507	0	233	245	743	817	275	959	58
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1714	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	4.1	4.6	7.9	14.1	0.0	12.1	13.0	10.0	38.3	14.6	21.1	2.2
Cycle Q Clear(g_c), s	4.1	4.6	7.9	14.1	0.0	12.1	13.0	10.0	38.3	14.6	21.1	2.2
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	205	174	534	0	358	283	2015	626	314	1464	653
V/C Ratio(X)	0.77	0.46	0.76	0.95	0.00	0.65	0.87	0.37	1.31	0.88	0.66	0.09
Avail Cap(c_a), veh/h	202	501	424	534	0	530	422	2015	626	459	1464	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	40.5	42.0	40.7	0.0	35.1	39.8	20.8	29.4	38.9	23.0	17.4
Incr Delay (d2), s/veh	12.1	1.6	6.6	26.8	0.0	2.0	11.7	0.5	149.0	12.3	2.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.2	3.4	7.9	0.0	5.2	6.5	4.0	39.8	7.4	9.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	42.2	48.6	67.5	0.0	37.1	51.5	21.3	178.4	51.3	25.3	17.7
LnGrp LOS	E	D	D	E	A	D	D	C	F	D	C	B
Approach Vol, veh/h		303			740			1805			1292	
Approach Delay, s/veh		48.8			57.9			96.5			30.5	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	42.3	19.0	14.7	19.4	44.0	9.4	24.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	38.0	15.0	26.0	23.0	40.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	16.6	40.3	16.1	9.9	15.0	23.1	6.1	14.1
Green Ext Time (p_c), s	0.5	0.0	0.0	0.8	0.4	6.6	0.1	1.2

Intersection Summary		
HCM 6th Ctrl Delay		65.5
HCM 6th LOS		E

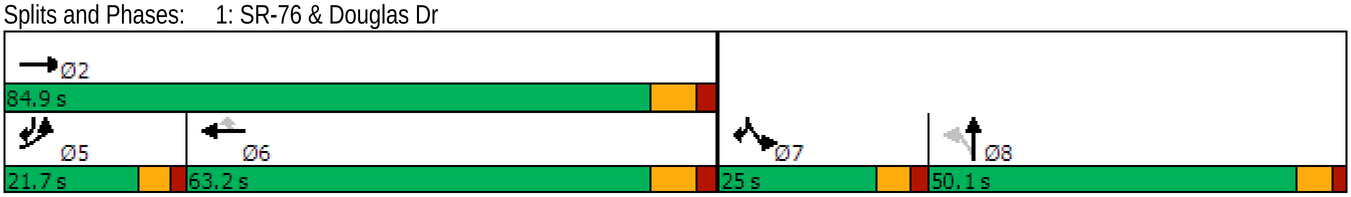
Appendix K

Existing + Cumulative + Project Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	267	966	1881	209	249	559	
Future Volume (vph)	267	966	1881	209	249	559	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	21.7	84.9	63.2	63.2	25.0		50.1
Total Split (%)	13.6%	53.1%	39.5%	39.5%	15.6%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	15.1	76.0	55.2	55.2	18.9	40.1	
Actuated g/C Ratio	0.14	0.70	0.51	0.51	0.17	0.37	
v/c Ratio	0.61	0.43	1.14	0.25	0.89	0.43	
Control Delay	50.2	7.7	98.2	3.2	74.1	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.2	7.7	98.2	3.2	74.1	2.9	
LOS	D	A	F	A	E	A	
Approach Delay		16.9	88.7				
Approach LOS		B	F				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 54.8	Intersection LOS: D
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	966	0	0	1881	209	0	0	0	249	0	559
Future Volume (veh/h)	267	966	0	0	1881	209	0	0	0	249	0	559
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	290	1050	0	0	2045	227	0	0	0	271	0	608
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	424	2480	0	0	1852	826	0	2	0	301	0	0
Arrive On Green	0.12	0.70	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.17	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	271	
Grp Volume(v), veh/h	290	1050	0	0	2045	227	0	0	0	271	69.2	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	8.5	13.4	0.0	0.0	55.2	8.5	0.0	0.0	0.0	15.8		
Cycle Q Clear(g_c), s	8.5	13.4	0.0	0.0	55.2	8.5	0.0	0.0	0.0	15.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	424	2480	0	0	1852	826	0	2	0	301		
V/C Ratio(X)	0.68	0.42	0.00	0.00	1.10	0.27	0.00	0.00	0.00	0.90		
Avail Cap(c_a), veh/h	522	2580	0	0	1852	826	0	777	0	318		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	44.5	6.9	0.0	0.0	25.4	14.2	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	2.7	0.1	0.0	0.0	55.5	0.2	0.0	0.0	0.0	26.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.8	4.5	0.0	0.0	36.0	3.0	0.0	0.0	0.0	9.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	7.0	0.0	0.0	80.9	14.3	0.0	0.0	0.0	69.2		
LnGrp LOS	D	A	A	A	F	B	A	A	A	E		
Approach Vol, veh/h		1340			2272			0				
Approach Delay, s/veh		15.7			74.2			0.0				
Approach LOS		B			E							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		81.9			18.7	63.2	24.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		76.9			* 16	55.2	18.9	44.0				
Max Q Clear Time (g_c+I1), s		15.4			10.5	57.2	17.8	0.0				
Green Ext Time (p_c), s		6.4			0.6	0.0	0.1	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	53.7
HCM 6th LOS	D

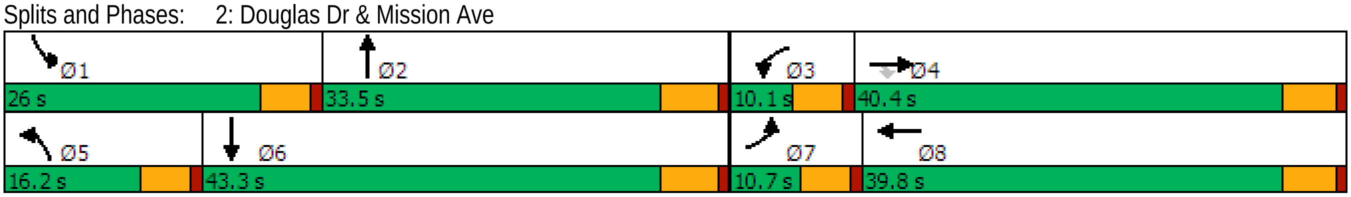
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	70	272	62	49	462	111	322	408	745
Future Volume (vph)	70	272	62	49	462	111	322	408	745
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.7	40.4	40.4	10.1	39.8	16.2	33.5	26.0	43.3
Total Split (%)	9.7%	36.7%	36.7%	9.2%	36.2%	14.7%	30.5%	23.6%	39.4%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.9	26.9	26.9	5.2	26.5	10.3	19.5	21.8	31.0
Actuated g/C Ratio	0.06	0.29	0.29	0.06	0.29	0.11	0.21	0.23	0.33
v/c Ratio	0.35	0.29	0.11	0.54	0.81	0.62	0.49	1.06	0.77
Control Delay	52.4	27.2	0.4	69.0	31.8	58.8	35.0	101.2	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	27.2	0.4	69.0	31.8	58.8	35.0	101.2	33.8
LOS	D	C	A	E	C	E	D	F	C
Approach Delay		27.5			34.0		41.0		56.0
Approach LOS		C			C		D		E

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 92.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 43.5	Intersection LOS: D
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	272	62	49	462	334	111	322	10	408	745	83
Future Volume (veh/h)	70	272	62	49	462	334	111	322	10	408	745	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	296	67	53	502	363	121	350	11	443	810	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	1100	491	75	595	430	163	506	16	444	973	108
Arrive On Green	0.05	0.31	0.31	0.04	0.30	0.30	0.09	0.14	0.14	0.25	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	1781	1969	1422	1781	3517	110	1781	3224	358
Grp Volume(v), veh/h	76	296	67	53	453	412	121	176	185	443	446	454
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1614	1781	1777	1851	1781	1777	1806
Q Serve(g_s), s	1.8	5.3	2.6	2.5	20.0	20.1	5.6	7.9	8.0	20.8	19.6	19.6
Cycle Q Clear(g_c), s	1.8	5.3	2.6	2.5	20.0	20.1	5.6	7.9	8.0	20.8	19.6	19.6
Prop In Lane	1.00		1.00	1.00		0.88	1.00		0.06	1.00		0.20
Lane Grp Cap(c), veh/h	171	1100	491	75	537	488	163	255	266	444	536	545
V/C Ratio(X)	0.44	0.27	0.14	0.70	0.84	0.84	0.74	0.69	0.69	1.00	0.83	0.83
Avail Cap(c_a), veh/h	231	1483	662	106	729	662	236	587	611	444	795	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	21.8	20.9	39.6	27.4	27.4	37.1	34.1	34.1	31.4	27.3	27.3
Incr Delay (d2), s/veh	1.8	0.1	0.1	11.3	6.7	7.4	7.1	3.3	3.2	42.1	4.9	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	0.9	1.3	9.1	8.4	2.7	3.6	3.7	13.8	8.7	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	21.9	21.0	50.9	34.1	34.8	44.3	37.5	37.4	73.5	32.2	32.2
LnGrp LOS	D	C	C	D	C	C	D	D	D	E	C	C
Approach Vol, veh/h		439			918			482			1343	
Approach Delay, s/veh		25.0			35.4			39.1			45.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	17.9	8.6	31.3	12.8	31.1	9.2	30.7
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	20.9	27.7	5.0	35.0	11.1	37.5	5.6	34.4
Max Q Clear Time (g_c+I1), s	22.8	10.0	4.5	7.3	7.6	21.6	3.8	22.1
Green Ext Time (p_c), s	0.0	1.3	0.0	1.6	0.1	3.6	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

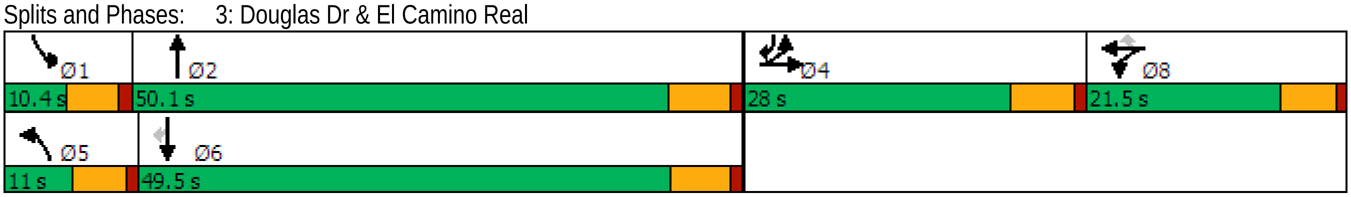
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	342	17	42	33	1	51	591	8	1149	1151
Future Volume (vph)	342	17	42	33	1	51	591	8	1149	1151
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	28.0	28.0		21.5	21.5	11.0	50.1	10.4	49.5	28.0
Total Split (%)	25.5%	25.5%		19.5%	19.5%	10.0%	45.5%	9.5%	45.0%	25.5%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	20.5	20.5	94.6	11.7	11.7	6.1	45.7	5.4	39.8	69.1
Actuated g/C Ratio	0.22	0.22	1.00	0.12	0.12	0.06	0.48	0.06	0.42	0.73
v/c Ratio	0.50	0.04	0.03	0.50	0.00	0.49	0.40	0.09	0.84	0.62
Control Delay	38.7	35.4	0.0	52.2	0.0	64.9	18.0	51.9	33.2	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	35.4	0.0	52.2	0.0	64.9	18.0	51.9	33.2	11.5
LOS	D	D	A	D	A	E	B	D	C	B
Approach Delay		34.5		51.7			21.5		22.4	
Approach LOS		C		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 94.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	17	42	70	33	1	51	591	37	8	1149	1151
Future Volume (veh/h)	342	17	42	70	33	1	51	591	37	8	1149	1151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	372	18	0	76	36	1	55	642	40	9	1249	1251
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	266		99	47	128	75	1690	105	20	1657	1697
Arrive On Green	0.14	0.14	0.00	0.08	0.08	0.08	0.04	0.50	0.50	0.01	0.47	0.47
Sat Flow, veh/h	3456	1870	1585	1228	581	1585	1781	3398	211	1781	3554	2790
Grp Volume(v), veh/h	372	18	0	112	0	1	55	335	347	9	1249	1251
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1809	0	1585	1781	1777	1832	1781	1777	1395
Q Serve(g_s), s	9.0	0.7	0.0	5.3	0.0	0.1	2.6	10.1	10.2	0.4	25.1	27.6
Cycle Q Clear(g_c), s	9.0	0.7	0.0	5.3	0.0	0.1	2.6	10.1	10.2	0.4	25.1	27.6
Prop In Lane	1.00		1.00	0.68		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	491	266		146	0	128	75	884	911	20	1657	1697
V/C Ratio(X)	0.76	0.07		0.77	0.00	0.01	0.73	0.38	0.38	0.45	0.75	0.74
Avail Cap(c_a), veh/h	869	470		334	0	293	115	900	928	103	1783	1797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	32.2	0.0	39.1	0.0	36.7	41.0	13.5	13.5	42.6	19.0	12.1
Incr Delay (d2), s/veh	2.4	0.1	0.0	8.3	0.0	0.0	12.6	0.3	0.3	15.0	1.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.3	0.0	2.6	0.0	0.0	1.4	3.9	4.0	0.3	10.0	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	32.3	0.0	47.3	0.0	36.7	53.6	13.8	13.8	57.6	20.8	13.6
LnGrp LOS	D	C		D	A	D	D	B	B	E	C	B
Approach Vol, veh/h		390	A		113			737			2509	
Approach Delay, s/veh		37.9			47.2			16.7			17.3	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	49.3		18.5	9.1	46.6		12.5				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	43.9		21.8	5.6	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.4	12.2		11.0	4.6	29.6		7.3				
Green Ext Time (p_c), s	0.0	3.0		1.4	0.0	10.8		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Notes

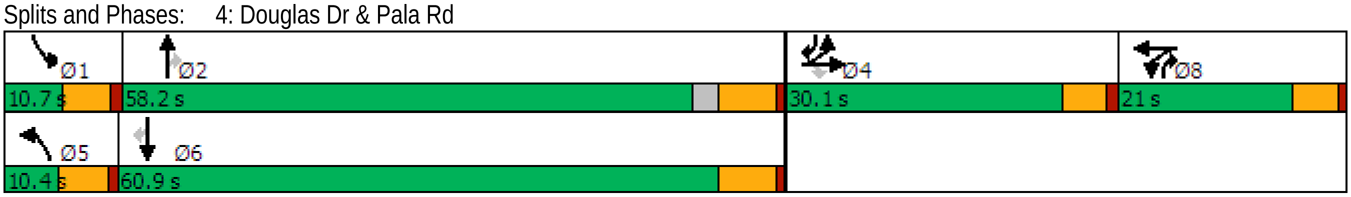
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	3	96	13	2	40	901	20	15	2040	67
Future Volume (vph)	66	3	96	13	2	40	901	20	15	2040	67
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	58.2	21.0	10.7	60.9	30.1
Total Split (%)	24.6%	24.6%	24.6%	17.2%	17.2%	8.5%	47.5%	17.2%	8.7%	49.8%	24.6%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.2	10.2	10.2	6.6	6.6	5.1	63.0	69.1	5.4	58.6	76.2
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.05	0.66	0.73	0.06	0.61	0.80
v/c Ratio	0.21	0.21	0.38	0.11	0.21	0.46	0.42	0.02	0.16	1.02	0.06
Control Delay	41.7	41.6	9.0	48.2	23.0	63.9	11.6	0.1	51.7	46.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	41.6	9.0	48.2	23.0	63.9	11.6	0.1	51.7	46.2	1.0
LOS	D	D	A	D	C	E	B	A	D	D	A
Approach Delay		22.7			31.4		13.5			44.8	
Approach LOS		C			C		B			D	

Intersection Summary	
Cycle Length: 122.4	
Actuated Cycle Length: 95.3	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 81.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	3	96	13	2	24	40	901	20	15	2040	67
Future Volume (veh/h)	66	3	96	13	2	24	40	901	20	15	2040	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	0	104	14	2	26	43	979	22	16	2217	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	0	145	76	5	64	64	2172	1037	32	2108	1085
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.04	0.61	0.61	0.02	0.59	0.59
Sat Flow, veh/h	3563	0	1585	1781	114	1488	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	74	0	104	14	0	28	43	979	22	16	2217	73
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1603	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.8	0.0	5.9	0.7	0.0	1.6	2.2	13.6	0.4	0.8	54.7	1.4
Cycle Q Clear(g_c), s	1.8	0.0	5.9	0.7	0.0	1.6	2.2	13.6	0.4	0.8	54.7	1.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	0	145	76	0	69	64	2172	1037	32	2108	1085
V/C Ratio(X)	0.23	0.00	0.72	0.18	0.00	0.41	0.67	0.45	0.02	0.49	1.05	0.07
Avail Cap(c_a), veh/h	966	0	430	307	0	276	97	2172	1037	102	2108	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	0.0	40.7	42.6	0.0	43.0	43.9	9.6	5.6	44.8	18.8	4.8
Incr Delay (d2), s/veh	0.4	0.0	6.5	1.1	0.0	3.8	11.2	0.1	0.0	11.1	34.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.5	0.3	0.0	0.7	1.2	4.8	0.2	0.5	29.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	47.2	43.7	0.0	46.8	55.1	9.8	5.6	55.9	53.7	4.8
LnGrp LOS	D	A	D	D	A	D	E	A	A	E	F	A
Approach Vol, veh/h		178			42			1044			2306	
Approach Delay, s/veh		43.9			45.8			11.6			52.1	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	62.6		13.5	8.7	60.9		9.1
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.3	52.0		25.0	5.0	54.7		15.9
Max Q Clear Time (g_c+I1), s	2.8	15.6		7.9	4.2	56.7		3.6
Green Ext Time (p_c), s	0.0	5.7		0.6	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

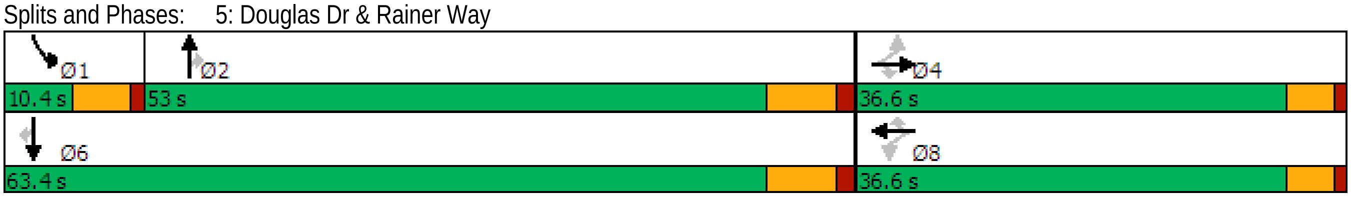
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	2	109	68	4	6	979	33	2	1951	37
Future Volume (vph)	15	2	109	68	4	6	979	33	2	1951	37
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.9	12.9		12.9	12.9	59.2	59.2	5.0	60.9	60.9
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.69	0.69	0.06	0.71	0.71
v/c Ratio		0.08	0.37		0.38	0.02	0.43	0.03	0.02	0.84	0.04
Control Delay		27.8	11.5		35.3	0.2	9.0	0.5	41.5	15.1	4.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		27.8	11.5		35.3	0.2	9.0	0.5	41.5	15.1	4.5
LOS		C	B		D	A	A	A	D	B	A
Approach Delay		13.7			32.4		8.7			15.0	
Approach LOS		B			C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 85.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	2	109	68	4	6	0	979	33	2	1951	37
Future Volume (veh/h)	15	2	109	68	4	6	0	979	33	2	1951	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	2	118	74	4	7	0	1064	36	2	2121	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	73	5	505	76	2	505	0	1817	810	5	2019	900
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.00	0.51	0.51	0.00	0.57	0.57
Sat Flow, veh/h	16	17	1585	17	7	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	18	0	118	78	0	7	0	1064	36	2	2121	40
Grp Sat Flow(s),veh/h/ln	33	0	1585	24	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.4	0.0	5.5	0.4	0.0	0.3	0.0	20.8	1.1	0.1	56.7	1.1
Cycle Q Clear(g_c), s	31.8	0.0	5.5	31.8	0.0	0.3	0.0	20.8	1.1	0.1	56.7	1.1
Prop In Lane	0.89		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	505	78	0	505	0	1817	810	5	2019	900
V/C Ratio(X)	0.23	0.00	0.23	1.00	0.00	0.01	0.00	0.59	0.04	0.42	1.05	0.04
Avail Cap(c_a), veh/h	81	0	508	80	0	508	0	1817	810	89	2019	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	25.0	49.1	0.0	23.3	0.0	17.0	12.2	49.7	21.6	9.6
Incr Delay (d2), s/veh	1.5	0.0	0.2	99.9	0.0	0.0	0.0	0.5	0.0	49.4	34.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	4.1	0.0	0.1	0.0	8.2	0.4	0.1	31.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	25.3	149.0	0.0	23.3	0.0	17.5	12.2	99.1	56.4	9.6
LnGrp LOS	D	A	C	F	A	C	A	B	B	F	F	A
Approach Vol, veh/h		136			85			1100			2163	
Approach Delay, s/veh		27.6			138.6			17.3			55.6	
Approach LOS		C			F			B			E	

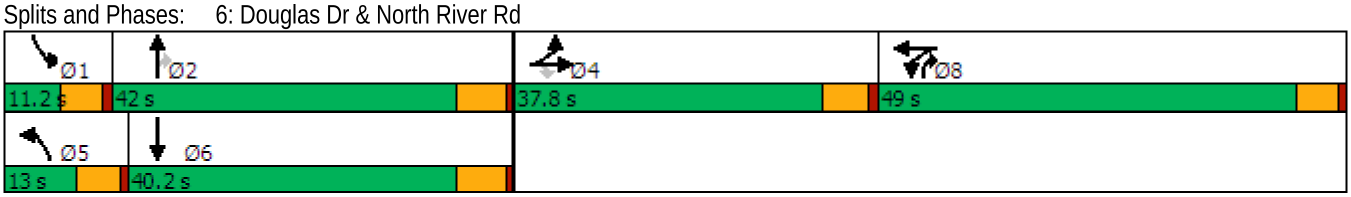
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.7	57.7		36.5		63.4		36.5				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.1	22.8		33.8		58.7		33.8				
Green Ext Time (p_c), s	0.0	6.0		0.0		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			44.5
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	53	95	187	1042	49	71	434	400	18	705
Future Volume (vph)	53	95	187	1042	49	71	434	400	18	705
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	49.0	49.0	13.0	42.0	49.0	11.2	40.2
Total Split (%)	27.0%	27.0%	27.0%	35.0%	35.0%	9.3%	30.0%	35.0%	8.0%	28.7%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	15.9	15.9	15.9	43.9	43.9	7.6	41.7	89.8	5.8	32.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.36	0.06	0.34	0.73	0.05	0.27
v/c Ratio	0.25	0.23	0.68	0.99	0.94dl	0.70	0.39	0.20	0.24	0.82
Control Delay	50.0	48.3	35.0	75.2	35.4	90.5	34.7	0.8	67.9	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	48.3	35.0	75.2	35.4	90.5	34.7	0.8	67.9	51.6
LOS	D	D	C	E	D	F	C	A	E	D
Approach Delay		41.2			54.0		24.1			52.0
Approach LOS		D			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 123.1	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 74.7%	ICU Level of Service D
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	95	187	1042	49	21	71	434	400	18	705	9
Future Volume (veh/h)	53	95	187	1042	49	21	71	434	400	18	705	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	103	203	1133	53	23	77	472	435	20	766	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	558	249	1242	431	187	98	1012	1767	36	899	12
Arrive On Green	0.16	0.16	0.16	0.35	0.35	0.35	0.05	0.28	0.28	0.02	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3563	1237	537	1781	3554	2790	1781	3592	47
Grp Volume(v), veh/h	58	103	203	1133	0	76	77	472	435	20	379	397
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1774	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	3.4	3.0	14.9	36.6	0.0	3.5	5.1	13.2	8.2	1.3	24.5	24.5
Cycle Q Clear(g_c), s	3.4	3.0	14.9	36.6	0.0	3.5	5.1	13.2	8.2	1.3	24.5	24.5
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	280	558	249	1242	0	618	98	1012	1767	36	445	466
V/C Ratio(X)	0.21	0.18	0.82	0.91	0.00	0.12	0.79	0.47	0.25	0.55	0.85	0.85
Avail Cap(c_a), veh/h	473	944	421	1289	0	642	112	1056	1801	86	501	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	44.1	49.1	37.5	0.0	26.7	56.2	35.5	9.6	58.5	43.0	43.0
Incr Delay (d2), s/veh	0.5	0.2	8.9	10.0	0.0	0.1	27.0	0.7	0.2	12.6	14.2	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	6.5	17.4	0.0	1.5	3.0	5.8	5.5	0.7	12.4	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	44.3	57.9	47.5	0.0	26.8	83.3	36.2	9.7	71.1	57.2	56.7
LnGrp LOS	D	D	E	D	A	C	F	D	A	E	E	E
Approach Vol, veh/h		364			1209			984			796	
Approach Delay, s/veh		52.0			46.2			28.2			57.3	
Approach LOS		D			D			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	40.5		24.7	12.0	36.3		47.4				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	5.8	35.8		32.0	7.6	34.0		43.6				
Max Q Clear Time (g_c+I1), s	3.3	15.2		16.9	7.1	26.5		38.6				
Green Ext Time (p_c), s	0.0	8.7		2.0	0.0	3.7		3.4				

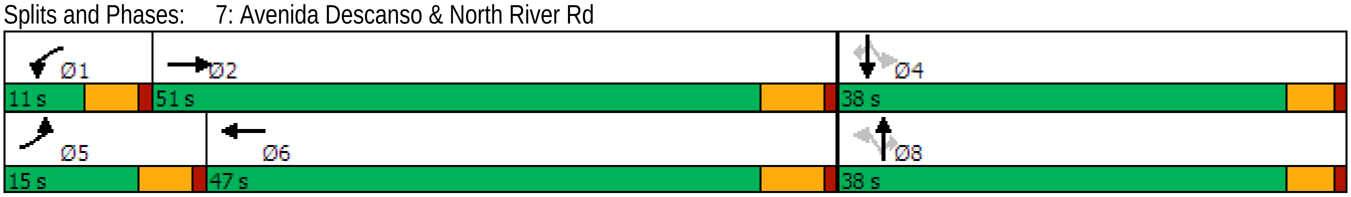
Intersection Summary			
HCM 6th Ctrl Delay			44.2
HCM 6th LOS			D

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	52	471	18	946	2	2	30	111	12	105
Future Volume (vph)	52	471	18	946	2	2	30	111	12	105
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	15.0	51.0	11.0	47.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	15.0%	51.0%	11.0%	47.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	8.4	30.0	6.8	26.5		14.2	14.2		14.2	14.2
Actuated g/C Ratio	0.14	0.50	0.11	0.44		0.24	0.24		0.24	0.24
v/c Ratio	0.23	0.29	0.10	0.69		0.01	0.07		0.41	0.25
Control Delay	34.1	10.6	37.1	18.0		22.2	0.3		27.1	6.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	34.1	10.6	37.1	18.0		22.2	0.3		27.1	6.7
LOS	C	B	D	B		C	A		C	A
Approach Delay		12.9		18.3		2.7			17.7	
Approach LOS		B		B		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 59.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	471	5	18	946	44	2	2	30	111	12	105
Future Volume (veh/h)	52	471	5	18	946	44	2	2	30	111	12	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	512	5	20	1028	48	2	2	33	121	13	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1357	13	40	1225	57	67	46	651	87	5	651
Arrive On Green	0.04	0.38	0.38	0.02	0.35	0.35	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1781	3606	35	1781	3457	161	1	113	1585	6	13	1585
Grp Volume(v), veh/h	57	252	265	20	528	548	4	0	33	134	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1841	114	0	1585	18	0	1585
Q Serve(g_s), s	2.6	8.4	8.4	0.9	22.2	22.2	0.0	0.0	1.0	0.2	0.0	3.7
Cycle Q Clear(g_c), s	2.6	8.4	8.4	0.9	22.2	22.2	33.4	0.0	1.0	33.4	0.0	3.7
Prop In Lane	1.00		0.02	1.00		0.09	0.50		1.00	0.90		1.00
Lane Grp Cap(c), veh/h	79	669	702	40	630	652	113	0	651	92	0	651
V/C Ratio(X)	0.72	0.38	0.38	0.50	0.84	0.84	0.04	0.00	0.05	1.46	0.00	0.18
Avail Cap(c_a), veh/h	217	988	1036	129	900	933	114	0	651	92	0	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	18.4	18.4	39.3	24.1	24.1	20.2	0.0	14.4	38.9	0.0	15.2
Incr Delay (d2), s/veh	11.6	0.4	0.3	9.5	4.9	4.8	0.1	0.0	0.0	256.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.4	3.5	0.5	9.7	10.0	0.0	0.0	0.4	8.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	18.8	18.8	48.8	29.1	28.9	20.3	0.0	14.5	295.5	0.0	15.3
LnGrp LOS	D	B	B	D	C	C	C	A	B	F	A	B
Approach Vol, veh/h		574			1096			37			248	
Approach Delay, s/veh		21.9			29.3			15.1			166.7	
Approach LOS		C			C			B			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	36.4		38.0	8.7	34.6		38.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	5.9	45.2		33.4	9.9	41.2		33.4
Max Q Clear Time (g_c+I1), s	2.9	10.4		35.4	4.6	24.2		35.4
Green Ext Time (p_c), s	0.0	2.1		0.0	0.0	4.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	598	1014	7	9	26
Future Vol, veh/h	12	598	1014	7	9	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	650	1102	8	10	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1110	0	-	0	1457	555
Stage 1	-	-	-	-	1106	-
Stage 2	-	-	-	-	351	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	625	-	-	-	120	475
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	625	-	-	-	117	475
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	625	-	-	-	266
HCM Lane V/C Ratio	0.021	-	-	-	0.143
HCM Control Delay (s)	10.9	-	-	-	20.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	562	26	26	877	5	102	0	102	15	0	40
Future Vol, veh/h	22	562	26	26	877	5	102	0	102	15	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	611	28	28	953	5	111	0	111	16	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	958	0	0	639	0	0	1206	-	320	1366	1699	479
Stage 1	-	-	-	-	-	-	673	-	-	1012	1012	-
Stage 2	-	-	-	-	-	-	533	-	-	354	687	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	714	-	-	941	-	-	139	0	676	106	91	533
Stage 1	-	-	-	-	-	-	411	0	-	256	315	-
Stage 2	-	-	-	-	-	-	498	0	-	636	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	714	-	-	941	-	-	122	-	676	84	85	533
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	-	-	84	85	-
Stage 1	-	-	-	-	-	-	397	-	-	247	306	-
Stage 2	-	-	-	-	-	-	444	-	-	514	431	-

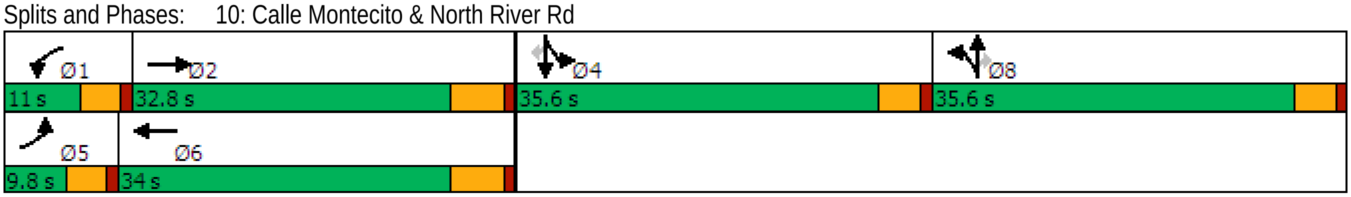
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	11.4	27.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	676	714	-	-	941	-	-	217
HCM Lane V/C Ratio	0.164	0.033	-	-	0.03	-	-	0.275
HCM Control Delay (s)	11.4	10.2	-	-	8.9	-	-	27.8
HCM Lane LOS	B	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	1.1

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	49	613	32	754	1	8	1	105
Future Volume (vph)	49	613	32	754	1	8	1	105
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.6	31.3	6.5	29.8	9.8	9.8	15.6	15.6
Actuated g/C Ratio	0.07	0.40	0.08	0.38	0.12	0.12	0.20	0.20
v/c Ratio	0.42	0.50	0.24	0.70	0.06	0.03	0.61	0.28
Control Delay	52.3	23.8	44.8	27.6	32.0	0.2	37.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	23.8	44.8	27.6	32.0	0.2	37.6	8.4
LOS	D	C	D	C	C	A	D	A
Approach Delay		25.8		28.2	19.0		27.5	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 78.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 58.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	613	27	32	754	98	11	1	8	196	1	105
Future Volume (veh/h)	49	613	27	32	754	98	11	1	8	196	1	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	666	29	35	820	107	12	1	9	213	1	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1192	52	67	1047	137	174	15	167	304	1	272
Arrive On Green	0.05	0.34	0.34	0.04	0.33	0.33	0.11	0.11	0.11	0.17	0.17	0.17
Sat Flow, veh/h	1781	3469	151	1781	3161	412	1650	138	1585	1773	8	1585
Grp Volume(v), veh/h	53	341	354	35	461	466	13	0	9	214	0	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1796	1788	0	1585	1782	0	1585
Q Serve(g_s), s	1.7	8.8	8.9	1.1	13.3	13.3	0.4	0.0	0.3	6.4	0.0	3.6
Cycle Q Clear(g_c), s	1.7	8.8	8.9	1.1	13.3	13.3	0.4	0.0	0.3	6.4	0.0	3.6
Prop In Lane	1.00		0.08	1.00		0.23	0.92		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	611	633	67	588	595	189	0	167	306	0	272
V/C Ratio(X)	0.60	0.56	0.56	0.53	0.78	0.78	0.07	0.00	0.05	0.70	0.00	0.42
Avail Cap(c_a), veh/h	166	848	880	204	886	895	976	0	865	973	0	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	15.1	15.1	26.8	17.1	17.2	22.9	0.0	22.8	22.1	0.0	21.0
Incr Delay (d2), s/veh	6.3	0.8	0.8	6.3	2.7	2.6	0.2	0.0	0.1	2.9	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.3	3.4	0.6	5.2	5.3	0.2	0.0	0.1	2.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	15.9	15.9	33.1	19.8	19.8	23.0	0.0	23.0	25.0	0.0	22.0
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		748			962			22			328	
Approach Delay, s/veh		17.1			20.3			23.0			24.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	25.2		14.3	7.3	24.5		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0
Max Q Clear Time (g_c+I1), s	3.1	10.9		8.4	3.7	15.3		2.4
Green Ext Time (p_c), s	0.0	2.7		1.3	0.0	3.5		0.0

Intersection Summary			
HCM 6th Ctrl Delay			19.8
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	43	792	834	1	0	83	0	
Future Volume (vph)	43	792	834	1	0	83	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.6	28.3	22.4		13.0	11.8	11.8	
Actuated g/C Ratio	0.14	0.52	0.41		0.24	0.22	0.22	
v/c Ratio	0.19	0.47	0.67		0.00	0.30	0.26	
Control Delay	32.3	9.1	17.0		0.0	23.9	2.4	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	32.3	9.1	17.0		0.0	23.9	2.4	
LOS	C	A	B		A	C	A	
Approach Delay		10.3	17.0				11.4	
Approach LOS		B	B				B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 54.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	792	0	0	834	52	1	0	1	83	0	115
Future Volume (veh/h)	43	792	0	0	834	52	1	0	1	83	0	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	861	0	0	907	57	1	0	1	90	0	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1950	0	4	1314	83	186	37	90	414	0	235
Arrive On Green	0.05	0.55	0.00	0.00	0.39	0.39	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3395	213	357	250	607	1416	0	1585
Grp Volume(v), veh/h	47	861	0	0	475	489	2	0	0	90	0	125
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1832	1214	0	0	1416	0	1585
Q Serve(g_s), s	1.0	5.9	0.0	0.0	9.1	9.1	0.0	0.0	0.0	0.0	0.0	3.0
Cycle Q Clear(g_c), s	1.0	5.9	0.0	0.0	9.1	9.1	3.0	0.0	0.0	1.8	0.0	3.0
Prop In Lane	1.00		0.00	1.00		0.12	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	90	1950	0	4	688	709	313	0	0	414	0	235
V/C Ratio(X)	0.52	0.44	0.00	0.00	0.69	0.69	0.01	0.00	0.00	0.22	0.00	0.53
Avail Cap(c_a), veh/h	329	4127	0	242	1976	2037	1201	0	0	1273	0	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.8	5.4	0.0	0.0	10.4	10.4	14.8	0.0	0.0	15.5	0.0	16.0
Incr Delay (d2), s/veh	4.6	0.2	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.3	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.0	0.0	2.8	2.9	0.0	0.0	0.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	5.6	0.0	0.0	11.6	11.6	14.8	0.0	0.0	15.8	0.0	17.9
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		908			964			2			215	
Approach Delay, s/veh		6.5			11.6			14.8			17.0	
Approach LOS		A			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	29.0		11.6	6.6	22.4		11.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32				
Max Q Clear Time (g_c+I1), s	0.0	7.9		5.0	3.0	11.1		5.0				
Green Ext Time (p_c), s	0.0	4.8		0.9	0.0	4.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			A									

Notes

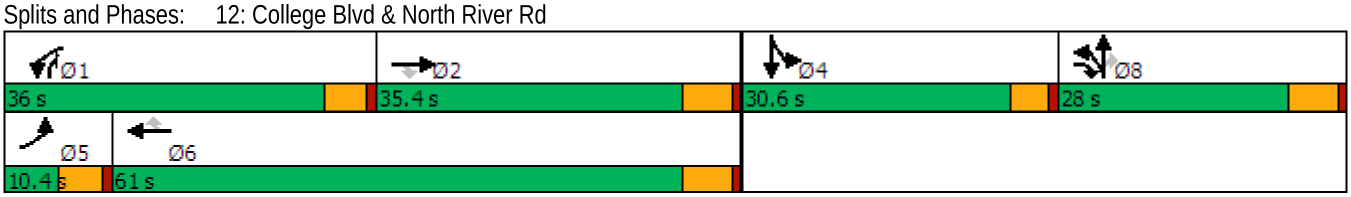
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

LOS Engineering, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	257	619	1148	543	70	21	1017	25	49
Future Volume (vph)	14	257	619	1148	543	70	21	1017	25	49
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	10.4	35.4	28.0	36.0	61.0	61.0	28.0	36.0	30.6	30.6
Total Split (%)	8.0%	27.2%	21.5%	27.7%	46.9%	46.9%	21.5%	27.7%	23.5%	23.5%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	14.9	39.1	31.7	48.1	48.1	22.7	60.4	10.7	10.7
Actuated g/C Ratio	0.05	0.15	0.39	0.32	0.48	0.48	0.23	0.61	0.11	0.11
v/c Ratio	0.16	0.53	0.78	1.14	0.34	0.09	0.92	0.53	0.14	0.31
Control Delay	55.6	43.3	14.0	107.2	18.7	2.0	68.1	3.3	43.1	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	43.3	14.0	107.2	18.7	2.0	68.1	3.3	43.1	42.4
LOS	E	D	B	F	B	A	E	A	D	D
Approach Delay		23.1			75.7		19.6			42.6
Approach LOS		C			E		B			D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 99.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	257	619	1148	543	70	322	21	1017	25	49	9
Future Volume (veh/h)	14	257	619	1148	543	70	322	21	1017	25	49	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	279	673	1248	590	76	350	23	1105	27	53	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	959	749	974	1901	848	339	22	1351	92	79	15
Arrive On Green	0.02	0.27	0.27	0.28	0.53	0.53	0.20	0.20	0.20	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1676	110	2790	1781	1530	289
Grp Volume(v), veh/h	15	279	673	1248	590	76	373	0	1105	27	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1787	0	1395	1781	0	1818
Q Serve(g_s), s	0.9	6.8	29.6	30.9	10.2	2.6	22.2	0.0	22.2	1.6	0.0	3.7
Cycle Q Clear(g_c), s	0.9	6.8	29.6	30.9	10.2	2.6	22.2	0.0	22.2	1.6	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	30	959	749	974	1901	848	362	0	1351	92	0	94
V/C Ratio(X)	0.50	0.29	0.90	1.28	0.31	0.09	1.03	0.00	0.82	0.29	0.00	0.67
Avail Cap(c_a), veh/h	86	959	749	974	1901	848	362	0	1351	422	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.5	31.7	23.1	39.4	14.2	12.5	43.7	0.0	24.2	50.1	0.0	51.1
Incr Delay (d2), s/veh	12.5	0.2	13.8	134.6	0.1	0.0	55.6	0.0	4.1	1.8	0.0	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	21.4	31.1	4.0	0.9	15.3	0.0	12.5	0.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	31.9	36.9	174.0	14.3	12.5	99.3	0.0	28.2	51.8	0.0	59.1
LnGrp LOS	E	C	D	F	B	B	F	A	C	D	A	E
Approach Vol, veh/h		967			1914			1478			90	
Approach Delay, s/veh		35.9			118.4			46.2			56.9	
Approach LOS		D			F			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	36.0	35.4		10.3	6.9	64.5		28.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8
Max Green Setting (Gmax), s	30.9	29.6		26.0	5.3	55.2		22.2
Max Q Clear Time (g_c+I1), s	32.9	31.6		5.7	2.9	12.2		24.2
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.3		0.0

Intersection Summary			
HCM 6th Ctrl Delay			75.2
HCM 6th LOS			E

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	27	27	1309	1727	74
Future Volume (vph)	50	27	27	1309	1727	74
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.5	6.3	57.0	50.7	50.7
Actuated g/C Ratio	0.16	0.23	0.09	0.81	0.72	0.72
v/c Ratio	0.19	0.08	0.10	0.50	0.74	0.07
Control Delay	27.2	16.4	34.6	6.4	16.5	6.8
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.2	16.4	34.6	6.4	16.5	6.8
LOS	C	B	C	A	B	A
Approach Delay	23.4			7.0	16.1	
Approach LOS	C			A	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 70.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

LOS Engineering, Inc.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	27	27	1309	1727	74
Future Volume (veh/h)	50	27	27	1309	1727	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	29	29	1423	1877	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	177	218	132	2589	2154	961
Arrive On Green	0.10	0.10	0.04	0.73	0.61	0.61
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	54	29	29	1423	1877	80
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.7	1.0	0.5	11.0	26.7	1.3
Cycle Q Clear(g_c), s	1.7	1.0	0.5	11.0	26.7	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	177	218	132	2589	2154	961
V/C Ratio(X)	0.30	0.13	0.22	0.55	0.87	0.08
Avail Cap(c_a), veh/h	825	794	366	3032	2356	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	22.9	28.2	3.7	9.9	4.9
Incr Delay (d2), s/veh	1.0	0.3	0.8	0.2	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.2	2.1	8.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.3	23.2	29.0	3.9	13.6	5.0
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	83			1452	1957	
Approach Delay, s/veh	25.2			4.4	13.2	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.9		10.6	7.4	42.5
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		13.0		3.7	2.5	28.7
Green Ext Time (p_c), s		9.9		0.3	0.0	8.0

Intersection Summary				
HCM 6th Ctrl Delay			9.8	
HCM 6th LOS			A	

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	175	12	81	17	40	20	1112	16	1535	206
Future Volume (vph)	175	12	81	17	40	20	1112	16	1535	206
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	43.2	10.1	43.2	43.2
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	11.2%	48.0%	11.2%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.5	16.5		16.5	16.5	5.1	41.1	5.1	39.3	39.3
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.07	0.59	0.07	0.56	0.56
v/c Ratio	0.63	0.25		0.35	0.10	0.17	0.42	0.13	0.84	0.24
Control Delay	33.5	7.5		25.3	0.4	39.0	10.4	38.6	21.8	8.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	7.5		25.3	0.4	39.0	10.4	38.6	21.8	8.3
LOS	C	A		C	A	D	B	D	C	A
Approach Delay		23.8		18.1			10.9		20.3	
Approach LOS		C		B			B		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	12	92	81	17	40	20	1112	30	16	1535	206
Future Volume (veh/h)	175	12	92	81	17	40	20	1112	30	16	1535	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	13	100	88	18	43	22	1209	33	17	1668	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	53	408	347	63	453	43	2509	68	35	1729	771
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.02	0.49	0.49	0.02	0.49	0.49
Sat Flow, veh/h	1341	186	1428	914	222	1585	1781	5110	139	1781	3554	1585
Grp Volume(v), veh/h	190	0	113	106	0	43	22	805	437	17	1668	224
Grp Sat Flow(s),veh/h/ln	1341	0	1613	1135	0	1585	1781	1702	1845	1781	1777	1585
Q Serve(g_s), s	10.4	0.0	4.1	4.4	0.0	1.5	0.9	12.1	12.1	0.7	34.9	6.5
Cycle Q Clear(g_c), s	18.9	0.0	4.1	8.5	0.0	1.5	0.9	12.1	12.1	0.7	34.9	6.5
Prop In Lane	1.00		0.88	0.83		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	329	0	461	410	0	453	43	1672	906	35	1729	771
V/C Ratio(X)	0.58	0.00	0.25	0.26	0.00	0.09	0.51	0.48	0.48	0.48	0.96	0.29
Avail Cap(c_a), veh/h	505	0	673	588	0	661	116	1672	906	116	1732	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	21.0	23.7	0.0	20.1	37.0	13.0	13.0	37.2	19.1	11.8
Incr Delay (d2), s/veh	1.6	0.0	0.3	0.3	0.0	0.1	8.8	0.2	0.4	9.8	14.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	1.5	1.6	0.0	0.6	0.5	4.2	4.6	0.4	16.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	21.3	24.0	0.0	20.2	45.8	13.2	13.4	47.0	33.3	12.0
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		303			149			1264			1909	
Approach Delay, s/veh		28.0			22.9			13.9			30.9	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	43.5		26.6	7.0	43.1		26.6				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	5.0	37.4		* 32	5.0	37.4		* 32				
Max Q Clear Time (g_c+I1), s	2.7	14.1		20.9	2.9	36.9		10.5				
Green Ext Time (p_c), s	0.0	6.3		0.9	0.0	0.5		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			24.4									
HCM 6th LOS			C									
Notes												

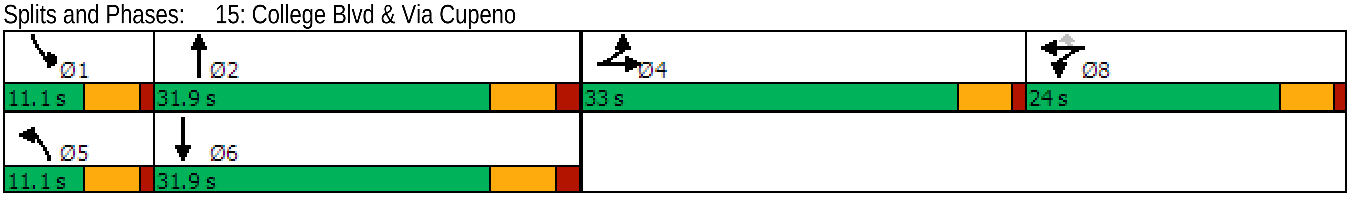
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1	5	1	148	1109	1	1622
Future Volume (vph)	1	5	1	148	1109	1	1622
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	11.1	31.9	11.1	31.9
Total Split (%)	33.0%	24.0%	24.0%	11.1%	31.9%	11.1%	31.9%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	11.8	11.8	6.2	35.9	6.2	26.0
Actuated g/C Ratio	0.15	0.16	0.16	0.08	0.48	0.08	0.35
v/c Ratio	0.20	0.54	0.00	0.56	0.51	0.01	1.04
Control Delay	18.5	38.6	0.0	45.5	18.8	39.0	59.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	38.6	0.0	45.5	18.8	39.0	59.8
LOS	B	D	A	D	B	D	E
Approach Delay	18.5	38.4			21.8		59.8
Approach LOS	B	D			C		E

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 74.5
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 42.4 — Intersection LOS: D
Intersection Capacity Utilization 66.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 15: College Blvd & Via Cupeno



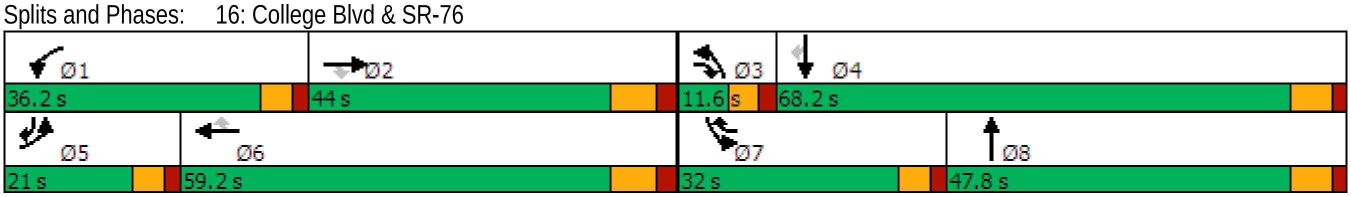
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	1	45	135	5	1	148	1109	38	1	1622	70
Future Volume (veh/h)	53	1	45	135	5	1	148	1109	38	1	1622	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	1	49	147	5	1	161	1205	41	1	1763	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	3	161	192	7	177	294	2317	79	3	1875	81
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.09	0.46	0.46	0.00	0.37	0.37
Sat Flow, veh/h	1781	32	1558	1725	59	1585	3456	5071	172	1781	5019	216
Grp Volume(v), veh/h	58	0	50	152	0	1	161	809	437	1	1195	644
Grp Sat Flow(s),veh/h/ln	1781	0	1590	1784	0	1585	1728	1702	1839	1781	1702	1831
Q Serve(g_s), s	2.0	0.0	2.0	5.5	0.0	0.0	3.0	11.3	11.4	0.0	22.7	22.8
Cycle Q Clear(g_c), s	2.0	0.0	2.0	5.5	0.0	0.0	3.0	11.3	11.4	0.0	22.7	22.8
Prop In Lane	1.00		0.98	0.97		1.00	1.00		0.09	1.00		0.12
Lane Grp Cap(c), veh/h	184	0	164	199	0	177	294	1555	840	3	1272	684
V/C Ratio(X)	0.32	0.00	0.30	0.76	0.00	0.01	0.55	0.52	0.52	0.34	0.94	0.94
Avail Cap(c_a), veh/h	744	0	664	506	0	449	309	1555	840	159	1274	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	27.8	28.9	0.0	26.5	29.4	13.0	13.0	33.4	20.3	20.3
Incr Delay (d2), s/veh	1.0	0.0	1.0	6.0	0.0	0.0	1.8	0.3	0.6	57.1	13.4	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.8	2.6	0.0	0.0	1.3	3.9	4.3	0.1	10.5	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	28.9	34.9	0.0	26.5	31.3	13.3	13.5	90.6	33.6	41.4
LnGrp LOS	C	A	C	C	A	C	C	B	B	F	C	D
Approach Vol, veh/h		108			153			1407			1840	
Approach Delay, s/veh		28.8			34.9			15.4			36.4	
Approach LOS		C			C			B			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	37.4		11.9	10.8	31.8		12.5				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	25.1		28.0	6.0	25.1		19.0				
Max Q Clear Time (g_c+I1), s	2.0	13.4		4.0	5.0	24.8		7.5				
Green Ext Time (p_c), s	0.0	4.8		0.4	0.1	0.3		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	322	814	30	566	1401	487	54	493	576	843	378
Future Volume (vph)	322	814	30	566	1401	487	54	493	576	843	378
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	35.7	49.6	29.9	50.3	84.7	5.9	39.7	26.3	62.6	84.7
Actuated g/C Ratio	0.10	0.23	0.31	0.19	0.32	0.54	0.04	0.25	0.17	0.40	0.54
v/c Ratio	1.05	0.77	0.06	0.95	0.94	0.60	0.46	0.94	1.09	0.65	0.46
Control Delay	130.0	62.7	0.2	87.1	64.3	25.3	87.2	71.5	125.3	42.2	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.0	62.7	0.2	87.1	64.3	25.3	87.2	71.5	125.3	42.2	18.2
LOS	F	E	A	F	E	C	F	E	F	D	B
Approach Delay		79.7			61.8			72.5		63.8	
Approach LOS		E			E			E		E	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 157.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 67.1	Intersection LOS: E
Intersection Capacity Utilization 97.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	814	30	566	1401	487	54	493	275	576	843	378
Future Volume (veh/h)	322	814	30	566	1401	487	54	493	275	576	843	378
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	350	885	33	615	1523	529	59	536	299	626	916	411
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	1150	400	655	1626	767	95	562	313	572	1397	776
Arrive On Green	0.10	0.23	0.23	0.19	0.32	0.32	0.03	0.26	0.26	0.17	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2201	1226	3456	3554	1585
Grp Volume(v), veh/h	350	885	33	615	1523	529	59	432	403	626	916	411
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1650	1728	1777	1585
Q Serve(g_s), s	15.3	25.8	2.5	27.9	46.1	41.1	2.7	38.1	38.2	26.3	33.5	28.4
Cycle Q Clear(g_c), s	15.3	25.8	2.5	27.9	46.1	41.1	2.7	38.1	38.2	26.3	33.5	28.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	333	1150	400	655	1626	767	95	453	421	572	1397	776
V/C Ratio(X)	1.05	0.77	0.08	0.94	0.94	0.69	0.62	0.95	0.96	1.10	0.66	0.53
Avail Cap(c_a), veh/h	333	1156	402	663	1644	773	128	458	425	572	1397	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	57.7	45.4	63.6	52.6	31.8	76.5	58.3	58.3	66.4	39.4	28.0
Incr Delay (d2), s/veh	63.8	3.2	0.1	21.3	10.6	2.6	6.6	30.4	32.4	66.3	1.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	11.5	1.0	14.2	21.3	16.4	1.3	21.0	19.8	16.9	15.0	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.7	60.9	45.4	84.8	63.2	34.4	83.1	88.7	90.7	132.6	40.6	28.7
LnGrp LOS	F	E	D	F	E	C	F	F	F	F	D	C
Approach Vol, veh/h		1268			2667			894			1953	
Approach Delay, s/veh		81.2			62.5			89.2			67.6	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.8	43.8	10.1	69.3	21.0	58.6	32.0	47.4
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	29.9	27.8	4.7	35.5	17.3	48.1	28.3	40.2
Green Ext Time (p_c), s	0.2	3.0	0.0	7.5	0.0	2.6	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	71.0
HCM 6th LOS	E

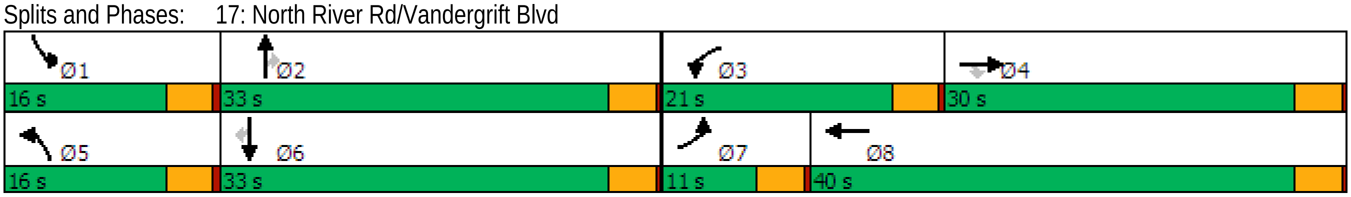
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	56	109	670	51	116	817	315	105	703	38
Future Volume (vph)	47	56	109	670	51	116	817	315	105	703	38
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	10.6	10.6	17.2	25.5	10.2	31.9	31.9	10.0	29.3	29.3
Actuated g/C Ratio	0.08	0.13	0.13	0.21	0.31	0.12	0.38	0.38	0.12	0.35	0.35
v/c Ratio	0.36	0.26	0.36	1.03	0.49	0.58	0.46	0.42	0.54	0.62	0.06
Control Delay	46.8	34.8	6.9	77.5	8.0	47.5	22.4	4.7	46.1	26.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	34.8	6.9	77.5	8.0	47.5	22.4	4.7	46.1	26.5	0.2
LOS	D	C	A	E	A	D	C	A	D	C	A
Approach Delay		23.1			55.2		20.3			27.7	
Approach LOS		C			E		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 83.5	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	56	109	670	51	265	116	817	315	105	703	38
Future Volume (veh/h)	47	56	109	670	51	265	116	817	315	105	703	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	61	118	728	55	288	126	888	342	114	764	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	198	168	762	74	386	161	1961	609	146	1337	596
Arrive On Green	0.04	0.11	0.11	0.22	0.28	0.28	0.09	0.38	0.38	0.08	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	3456	261	1364	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	51	61	118	728	0	343	126	888	342	114	764	41
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1625	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	2.2	2.3	5.5	16.0	0.0	14.8	5.3	10.0	13.1	4.8	13.2	1.3
Cycle Q Clear(g_c), s	2.2	2.3	5.5	16.0	0.0	14.8	5.3	10.0	13.1	4.8	13.2	1.3
Prop In Lane	1.00		1.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	198	168	762	0	460	161	1961	609	146	1337	596
V/C Ratio(X)	0.66	0.31	0.70	0.96	0.00	0.75	0.78	0.45	0.56	0.78	0.57	0.07
Avail Cap(c_a), veh/h	162	631	534	762	0	759	277	1961	609	277	1337	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	31.9	33.3	29.7	0.0	25.1	34.3	17.7	18.7	34.7	19.1	15.4
Incr Delay (d2), s/veh	9.4	0.9	5.3	22.3	0.0	2.4	8.1	0.8	3.7	8.6	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	2.3	8.7	0.0	5.7	2.6	3.8	5.1	2.4	5.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	32.7	38.6	52.0	0.0	27.5	42.5	18.5	22.4	43.3	20.9	15.6
LnGrp LOS	D	C	D	D	A	C	D	B	C	D	C	B
Approach Vol, veh/h		230			1071			1356			919	
Approach Delay, s/veh		38.6			44.2			21.7			23.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.6	21.0	12.2	11.0	33.0	7.3	25.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	6.8	15.1	18.0	7.5	7.3	15.2	4.2	16.8
Green Ext Time (p_c), s	0.1	6.4	0.0	0.6	0.1	4.6	0.0	2.2

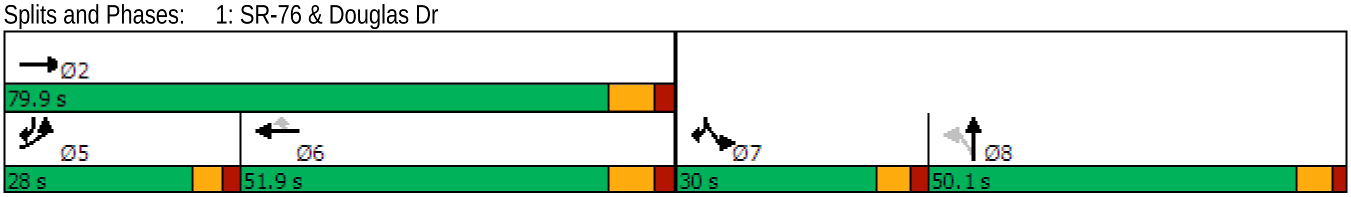
Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	577	1768	1158	266	288	400	
Future Volume (vph)	577	1768	1158	266	288	400	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	79.9	51.9	51.9	30.0		50.1
Total Split (%)	17.5%	49.9%	32.4%	32.4%	18.8%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	71.9	43.9	43.9	23.9	52.3	
Actuated g/C Ratio	0.20	0.65	0.40	0.40	0.22	0.48	
v/c Ratio	0.90	0.83	0.89	0.36	0.82	0.28	
Control Delay	60.3	18.5	40.1	3.9	59.0	2.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	60.3	18.5	40.1	3.9	59.0	2.0	
LOS	E	B	D	A	E	A	
Approach Delay		28.8	33.4				
Approach LOS		C	C				

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 109.9
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 79.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	577	1768	0	0	1158	266	0	0	0	288	0	400
Future Volume (veh/h)	577	1768	0	0	1158	266	0	0	0	288	0	400
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	627	1922	0	0	1259	289	0	0	0	313	0	435
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	708	2355	0	0	1424	635	0	2	0	350	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.20	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	313	
Grp Volume(v), veh/h	627	1922	0	0	1259	289	0	0	0	313	57.5	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	E	
Q Serve(g_s), s	17.7	39.8	0.0	0.0	32.9	13.4	0.0	0.0	0.0	17.2		
Cycle Q Clear(g_c), s	17.7	39.8	0.0	0.0	32.9	13.4	0.0	0.0	0.0	17.2		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	708	2355	0	0	1424	635	0	2	0	350		
V/C Ratio(X)	0.89	0.82	0.00	0.00	0.88	0.45	0.00	0.00	0.00	0.89		
Avail Cap(c_a), veh/h	769	2551	0	0	1558	695	0	822	0	425		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	38.7	12.4	0.0	0.0	27.8	22.0	0.0	0.0	0.0	39.2		
Incr Delay (d2), s/veh	11.4	2.0	0.0	0.0	6.0	0.5	0.0	0.0	0.0	18.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.5	14.3	0.0	0.0	14.6	5.0	0.0	0.0	0.0	9.2		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	14.5	0.0	0.0	33.9	22.5	0.0	0.0	0.0	57.5		
LnGrp LOS	D	B	A	A	C	C	A	A	A	E		
Approach Vol, veh/h		2549			1548			0				
Approach Delay, s/veh		23.2			31.8			0.0				
Approach LOS		C			C							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		74.4			26.2	48.1	25.8	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		71.9			* 22	43.9	23.9	44.0				
Max Q Clear Time (g_c+I1), s		41.8			19.7	34.9	19.2	0.0				
Green Ext Time (p_c), s		14.8			0.9	5.2	0.6	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		28.7
HCM 6th LOS		C

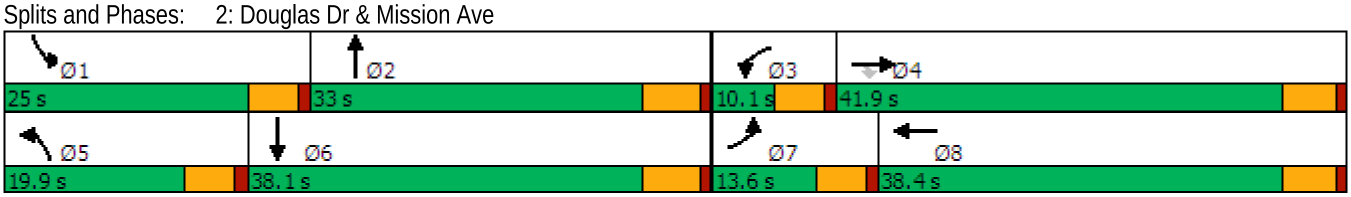
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	241	644	148	61	353	165	642	316	523
Future Volume (vph)	241	644	148	61	353	165	642	316	523
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.6	41.9	41.9	10.1	38.4	19.9	33.0	25.0	38.1
Total Split (%)	12.4%	38.1%	38.1%	9.2%	34.9%	18.1%	30.0%	22.7%	34.6%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.6	27.7	27.7	5.0	24.2	13.5	24.4	20.1	31.0
Actuated g/C Ratio	0.09	0.28	0.28	0.05	0.24	0.14	0.25	0.20	0.31
v/c Ratio	0.88	0.70	0.30	0.73	0.82	0.74	0.83	0.96	0.57
Control Delay	76.3	36.2	7.9	92.2	30.7	62.1	45.4	79.2	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	36.2	7.9	92.2	30.7	62.1	45.4	79.2	31.3
LOS	E	D	A	F	C	E	D	E	C
Approach Delay		41.5			35.3		48.7		48.3
Approach LOS		D			D		D		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 98.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 43.5	Intersection LOS: D
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	644	148	61	353	397	165	642	25	316	523	53
Future Volume (veh/h)	241	644	148	61	353	397	165	642	25	316	523	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	262	700	161	66	384	432	179	698	27	343	568	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1172	523	85	526	469	212	791	31	340	972	99
Arrive On Green	0.08	0.33	0.33	0.05	0.30	0.30	0.12	0.23	0.23	0.19	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3488	135	1781	3256	332
Grp Volume(v), veh/h	262	700	161	66	384	432	179	355	370	343	309	317
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1846	1781	1777	1811
Q Serve(g_s), s	7.9	17.2	7.9	3.8	20.3	27.5	10.3	20.2	20.2	19.9	15.4	15.5
Cycle Q Clear(g_c), s	7.9	17.2	7.9	3.8	20.3	27.5	10.3	20.2	20.2	19.9	15.4	15.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.18
Lane Grp Cap(c), veh/h	281	1172	523	85	526	469	212	403	419	340	531	541
V/C Ratio(X)	0.93	0.60	0.31	0.78	0.73	0.92	0.84	0.88	0.88	1.01	0.58	0.59
Avail Cap(c_a), veh/h	281	1243	554	85	562	501	253	463	481	340	550	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	29.2	26.1	49.2	33.0	35.6	45.0	39.0	39.0	42.2	31.1	31.1
Incr Delay (d2), s/veh	35.7	0.7	0.3	35.5	4.5	21.8	19.6	16.2	15.8	51.3	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.3	3.0	2.5	9.2	13.2	5.7	10.5	10.9	13.5	6.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	29.9	26.4	84.7	37.5	57.3	64.6	55.2	54.8	93.5	32.6	32.6
LnGrp LOS	F	C	C	F	D	E	E	E	D	F	C	C
Approach Vol, veh/h		1123			882			904			969	
Approach Delay, s/veh		41.9			50.7			56.9			54.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	29.5	10.1	39.8	17.5	37.0	13.6	36.3
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	19.9	27.2	5.0	36.5	14.8	32.3	8.5	33.0
Max Q Clear Time (g_c+I1), s	21.9	22.2	5.8	19.2	12.3	17.5	9.9	29.5
Green Ext Time (p_c), s	0.0	1.5	0.0	3.9	0.1	2.3	0.0	1.3

Intersection Summary			
HCM 6th Ctrl Delay			50.5
HCM 6th LOS			D

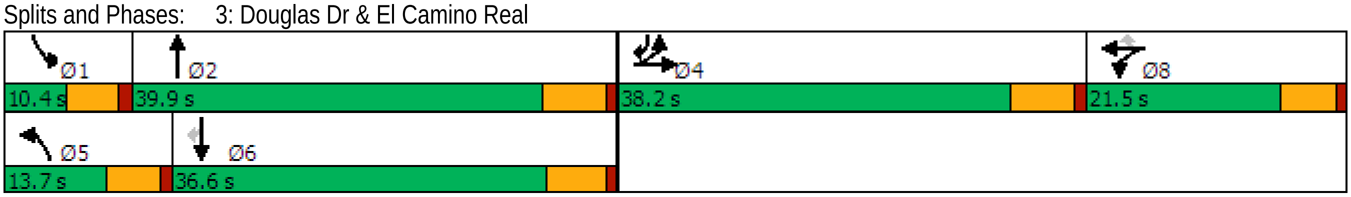
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1055	63	71	25	10	90	1083	7	744	640
Future Volume (vph)	1055	63	71	25	10	90	1083	7	744	640
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	38.2	38.2		21.5	21.5	13.7	39.9	10.4	36.6	38.2
Total Split (%)	34.7%	34.7%		19.5%	19.5%	12.5%	36.3%	9.5%	33.3%	34.7%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	32.4	32.4	98.7	10.1	10.1	8.1	39.0	5.1	27.5	66.0
Actuated g/C Ratio	0.33	0.33	1.00	0.10	0.10	0.08	0.40	0.05	0.28	0.67
v/c Ratio	1.02	0.11	0.05	0.47	0.04	0.68	0.90	0.09	0.82	0.37
Control Delay	66.4	27.3	0.1	52.1	0.2	70.3	39.0	51.1	42.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	27.3	0.1	52.1	0.2	70.3	39.0	51.1	42.0	8.8
LOS	E	C	A	D	A	E	D	D	D	A
Approach Delay		60.4		46.2			41.3		26.7	
Approach LOS		E		D			D		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 98.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1055	63	71	54	25	10	90	1083	64	7	744	640
Future Volume (veh/h)	1055	63	71	54	25	10	90	1083	64	7	744	640
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1147	68	0	59	27	11	98	1177	70	8	809	696
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1150	623		80	36	102	124	1195	71	18	1033	1740
Arrive On Green	0.33	0.33	0.00	0.06	0.06	0.06	0.07	0.35	0.35	0.01	0.29	0.29
Sat Flow, veh/h	3456	1870	1585	1241	568	1585	1781	3408	203	1781	3554	2790
Grp Volume(v), veh/h	1147	68	0	86	0	11	98	613	634	8	809	696
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1808	0	1585	1781	1777	1834	1781	1777	1395
Q Serve(g_s), s	31.9	2.4	0.0	4.5	0.0	0.6	5.2	32.9	33.0	0.4	20.1	12.0
Cycle Q Clear(g_c), s	31.9	2.4	0.0	4.5	0.0	0.6	5.2	32.9	33.0	0.4	20.1	12.0
Prop In Lane	1.00		1.00	0.69		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	1150	623		116	0	102	124	623	643	18	1033	1740
V/C Ratio(X)	1.00	0.11		0.74	0.00	0.11	0.79	0.98	0.99	0.45	0.78	0.40
Avail Cap(c_a), veh/h	1150	623		301	0	264	154	623	643	93	1131	1817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	22.2	0.0	44.2	0.0	42.4	44.0	31.0	31.0	47.3	31.3	9.1
Incr Delay (d2), s/veh	25.8	0.1	0.0	8.9	0.0	0.5	19.4	32.0	31.8	16.7	3.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	1.1	0.0	2.3	0.0	0.3	2.9	19.1	19.7	0.3	8.9	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	22.3	0.0	53.1	0.0	42.9	63.4	62.9	62.8	64.0	34.7	9.2
LnGrp LOS	E	C		D	A	D	E	E	E	E	C	A
Approach Vol, veh/h		1215	A		97			1345			1513	
Approach Delay, s/veh		55.8			51.9			62.9			23.1	
Approach LOS		E			D			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	39.9		38.2	12.1	34.2		11.7
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	33.7		32.0	8.3	* 31		16.0
Max Q Clear Time (g_c+I1), s	2.4	35.0		33.9	7.2	22.1		6.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	4.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

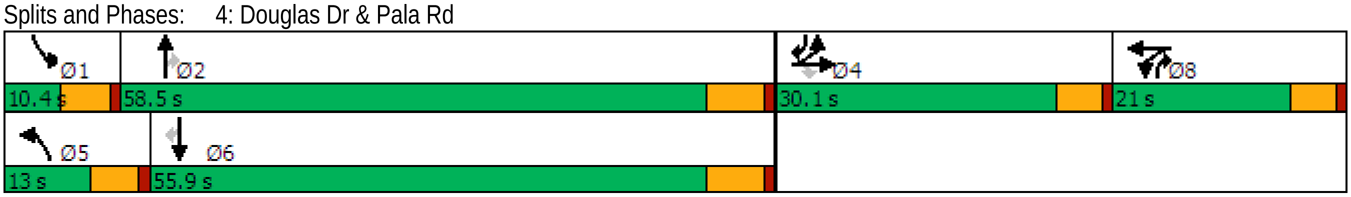
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	94	1	95	14	3	95	1942	22	21	1281	100
Future Volume (vph)	94	1	95	14	3	95	1942	22	21	1281	100
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	13.0	58.5	21.0	10.4	55.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.8%	48.8%	17.5%	8.7%	46.6%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.6	10.6	10.6	6.7	6.7	7.9	55.2	61.1	5.2	45.3	62.3
Actuated g/C Ratio	0.12	0.12	0.12	0.08	0.08	0.09	0.63	0.70	0.06	0.52	0.71
v/c Ratio	0.27	0.24	0.34	0.11	0.20	0.65	0.95	0.02	0.22	0.76	0.09
Control Delay	40.3	39.8	7.7	46.6	22.9	63.5	29.5	0.0	51.8	22.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	39.8	7.7	46.6	22.9	63.5	29.5	0.0	51.8	22.3	1.2
LOS	D	D	A	D	C	E	C	A	D	C	A
Approach Delay		23.9			30.9		30.7			21.2	
Approach LOS		C			C		C			C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 87.5
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 81.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	95	14	3	24	95	1942	22	21	1281	100
Future Volume (veh/h)	94	1	95	14	3	24	95	1942	22	21	1281	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	0	103	15	3	26	103	2111	24	23	1392	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	0	149	80	7	65	131	2100	1008	43	1926	1007
Arrive On Green	0.09	0.00	0.09	0.04	0.04	0.04	0.07	0.59	0.59	0.02	0.54	0.54
Sat Flow, veh/h	3563	0	1585	1781	167	1444	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	103	0	103	15	0	29	103	2111	24	23	1392	109
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1610	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.4	0.0	5.6	0.7	0.0	1.6	5.0	52.3	0.5	1.1	26.1	2.4
Cycle Q Clear(g_c), s	2.4	0.0	5.6	0.7	0.0	1.6	5.0	52.3	0.5	1.1	26.1	2.4
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	0	149	80	0	72	131	2100	1008	43	1926	1007
V/C Ratio(X)	0.31	0.00	0.69	0.19	0.00	0.40	0.79	1.01	0.02	0.53	0.72	0.11
Avail Cap(c_a), veh/h	1006	0	448	320	0	289	153	2100	1008	101	1995	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	0.0	38.9	40.7	0.0	41.1	40.3	18.1	6.0	42.7	15.3	6.3
Incr Delay (d2), s/veh	0.5	0.0	5.7	1.1	0.0	3.6	20.6	21.0	0.0	9.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	2.4	0.3	0.0	0.7	2.9	24.5	0.2	0.6	9.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	44.6	41.8	0.0	44.7	61.0	39.1	6.0	52.3	16.5	6.4
LnGrp LOS	D	A	D	D	A	D	E	F	A	D	B	A
Approach Vol, veh/h		206			44			2238			1524	
Approach Delay, s/veh		41.3			43.7			39.7			16.3	
Approach LOS		D			D			D			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	58.5		13.4	11.9	54.2		9.1				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	5.0	52.3		25.0	7.6	49.7		15.9				
Max Q Clear Time (g_c+I1), s	3.1	54.3		7.6	7.0	28.1		3.6				
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	8.7		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Notes

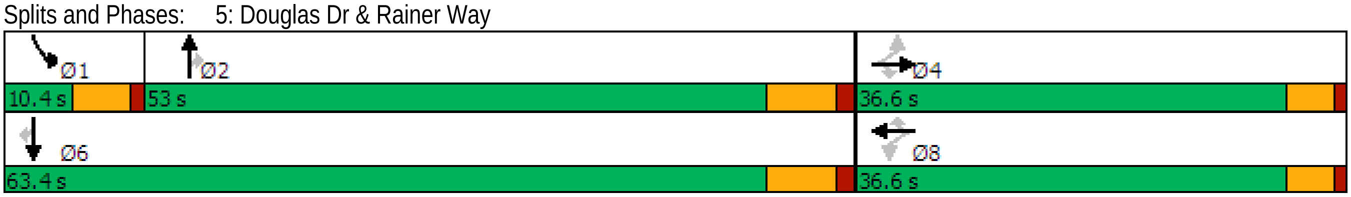
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	2	73	43	2	4	1874	82	4	1225	73
Future Volume (vph)	8	2	73	43	2	4	1874	82	4	1225	73
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	53.0	53.0	10.4	63.4	63.4
Total Split (%)	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	53.0%	53.0%	10.4%	63.4%	63.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		11.2	11.2		11.2	11.2	55.9	55.9	5.1	57.5	57.5
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.73	0.73	0.07	0.75	0.75
v/c Ratio		0.05	0.25		0.25	0.01	0.79	0.08	0.03	0.50	0.07
Control Delay		25.3	5.8		29.8	0.0	15.0	3.6	38.5	7.4	4.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.3	5.8		29.8	0.0	15.0	3.6	38.5	7.4	4.4
LOS		C	A		C	A	B	A	D	A	A
Approach Delay		8.2			27.6		14.6			7.3	
Approach LOS		A			C		B			A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 76.4
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 75.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: Douglas Dr & Rainer Way

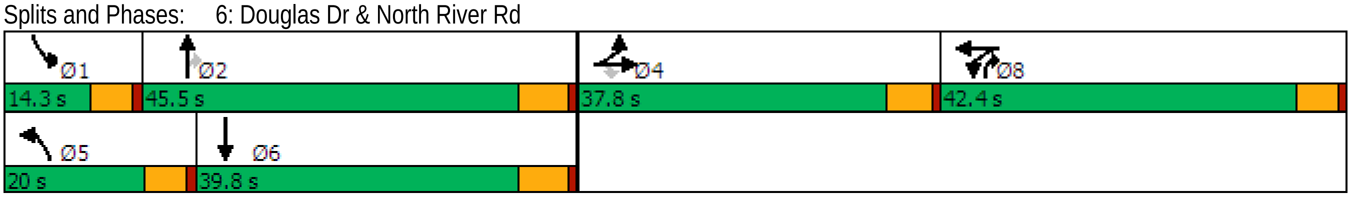


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	2	73	43	2	4	0	1874	82	4	1225	73
Future Volume (veh/h)	8	2	73	43	2	4	0	1874	82	4	1225	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	2	79	47	2	4	0	2037	89	4	1332	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	87	12	390	101	3	390	0	1955	872	9	2202	982
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.55	0.55	0.01	0.62	0.62
Sat Flow, veh/h	37	48	1585	71	11	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	11	0	79	49	0	4	0	2037	89	4	1332	79
Grp Sat Flow(s),veh/h/ln	86	0	1585	82	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	0.0	3.3	1.2	0.0	0.2	0.0	46.3	2.3	0.2	19.2	1.7
Cycle Q Clear(g_c), s	20.2	0.0	3.3	20.7	0.0	0.2	0.0	46.3	2.3	0.2	19.2	1.7
Prop In Lane	0.82		1.00	0.96		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	0	390	104	0	390	0	1955	872	9	2202	982
V/C Ratio(X)	0.11	0.00	0.20	0.47	0.00	0.01	0.00	1.04	0.10	0.43	0.60	0.08
Avail Cap(c_a), veh/h	297	0	603	283	0	603	0	1955	872	106	2395	1068
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	25.2	41.1	0.0	24.0	0.0	18.9	9.0	41.7	9.7	6.4
Incr Delay (d2), s/veh	0.5	0.0	0.3	3.3	0.0	0.0	0.0	32.2	0.1	28.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.3	1.1	0.0	0.1	0.0	25.3	0.7	0.2	6.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	25.4	44.4	0.0	24.0	0.0	51.1	9.1	70.1	10.1	6.4
LnGrp LOS	C	A	C	D	A	C	A	F	A	E	B	A
Approach Vol, veh/h		90			53			2126			1415	
Approach Delay, s/veh		25.6			42.8			49.4			10.1	
Approach LOS		C			D			D			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	5.8	53.0		25.9		58.8		25.9				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	46.3		32.0		56.7		32.0				
Max Q Clear Time (g_c+I1), s	2.2	48.3		22.2		21.2		22.7				
Green Ext Time (p_c), s	0.0	0.0		0.2		9.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			33.6									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	38	96	68	607	65	147	669	971	39	572
Future Volume (vph)	38	96	68	607	65	147	669	971	39	572
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.0	45.5	42.4	14.3	39.8
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.3%	32.5%	30.3%	10.2%	28.4%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.2	13.2	13.2	35.0	35.0	14.1	38.5	75.7	7.7	29.3
Actuated g/C Ratio	0.11	0.11	0.11	0.30	0.30	0.12	0.34	0.66	0.07	0.26
v/c Ratio	0.20	0.26	0.23	0.67	0.45	0.74	0.61	0.48	0.36	0.75
Control Delay	49.5	48.7	1.8	45.0	35.0	71.7	37.2	1.3	64.8	46.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	48.7	1.8	45.0	35.0	71.7	37.2	1.3	64.8	46.2
LOS	D	D	A	D	D	E	D	A	E	D
Approach Delay		33.0			39.3		20.5			47.3
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 114.8	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	96	68	607	65	40	147	669	971	39	572	46
Future Volume (veh/h)	38	96	68	607	65	40	147	669	971	39	572	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	104	74	660	71	43	160	727	1055	42	622	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	302	135	888	272	165	195	1375	1774	63	1042	84
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.11	0.39	0.39	0.04	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	3563	1091	661	1781	3554	2790	1781	3332	267
Grp Volume(v), veh/h	41	104	74	660	0	114	160	727	1055	42	331	341
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1751	1781	1777	1395	1781	1777	1822
Q Serve(g_s), s	2.0	2.6	4.2	16.0	0.0	4.9	8.2	14.8	20.7	2.2	14.8	14.8
Cycle Q Clear(g_c), s	2.0	2.6	4.2	16.0	0.0	4.9	8.2	14.8	20.7	2.2	14.8	14.8
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	152	302	135	888	0	436	195	1375	1774	63	556	570
V/C Ratio(X)	0.27	0.34	0.55	0.74	0.00	0.26	0.82	0.53	0.59	0.66	0.60	0.60
Avail Cap(c_a), veh/h	608	1214	541	1407	0	692	278	1491	1865	169	637	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	40.4	41.1	32.4	0.0	28.2	40.8	22.1	10.0	44.6	27.2	27.2
Incr Delay (d2), s/veh	1.4	1.0	4.9	1.8	0.0	0.4	12.2	0.7	0.8	11.3	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.2	1.8	7.0	0.0	2.1	4.2	6.1	11.3	1.2	6.5	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	41.4	46.0	34.2	0.0	28.7	53.0	22.8	10.8	56.0	29.5	29.5
LnGrp LOS	D	D	D	C	A	C	D	C	B	E	C	C
Approach Vol, veh/h		219			774			1942			714	
Approach Delay, s/veh		43.0			33.4			18.8			31.0	
Approach LOS		D			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	42.5		13.8	15.7	35.5		28.7				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	8.9	39.3		32.0	14.6	33.6		37.0				
Max Q Clear Time (g_c+I1), s	4.2	22.7		6.2	10.2	16.8		18.0				
Green Ext Time (p_c), s	0.0	13.5		1.4	0.2	5.4		5.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									

Notes

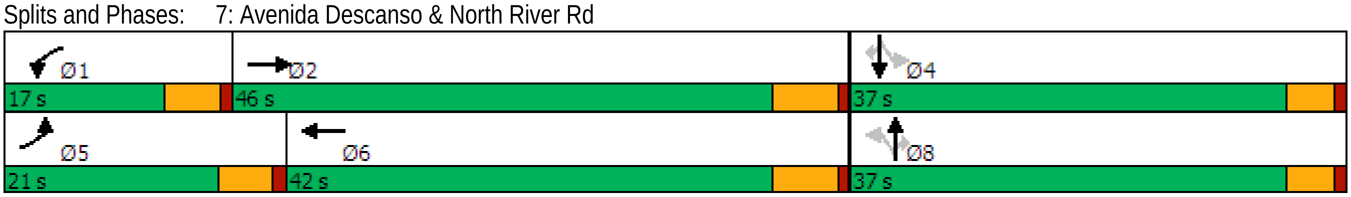
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	983	25	651	2	4	34	81	4	73
Future Volume (vph)	115	983	25	651	2	4	34	81	4	73
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	46.0	17.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	46.0%	17.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.7	29.3	7.4	21.2		12.2	12.2		12.2	12.2
Actuated g/C Ratio	0.19	0.51	0.13	0.37		0.21	0.21		0.21	0.21
v/c Ratio	0.38	0.60	0.12	0.62		0.02	0.09		0.32	0.20
Control Delay	30.2	14.1	32.8	19.2		21.5	0.4		25.3	6.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	30.2	14.1	32.8	19.2		21.5	0.4		25.3	6.5
LOS	C	B	C	B		C	A		C	A
Approach Delay		15.7		19.6		3.4			16.6	
Approach LOS		B		B		A			B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 57.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 56.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	983	12	25	651	85	2	4	34	81	4	73
Future Volume (veh/h)	115	983	12	25	651	85	2	4	34	81	4	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1068	13	27	708	92	2	4	37	88	4	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	1532	19	58	1152	150	165	220	240	374	13	240
Arrive On Green	0.09	0.43	0.43	0.03	0.36	0.36	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3596	44	1781	3163	411	290	1458	1585	1298	87	1585
Grp Volume(v), veh/h	125	528	553	27	398	402	6	0	37	92	0	79
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1796	1748	0	1585	1386	0	1585
Q Serve(g_s), s	2.7	9.6	9.6	0.6	7.3	7.3	0.0	0.0	0.8	2.3	0.0	1.8
Cycle Q Clear(g_c), s	2.7	9.6	9.6	0.6	7.3	7.3	0.1	0.0	0.8	2.4	0.0	1.8
Prop In Lane	1.00		0.02	1.00		0.23	0.33		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	168	757	793	58	647	654	385	0	240	387	0	240
V/C Ratio(X)	0.74	0.70	0.70	0.47	0.61	0.62	0.02	0.00	0.15	0.24	0.00	0.33
Avail Cap(c_a), veh/h	713	1799	1886	534	1620	1638	1475	0	1294	1306	0	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	9.3	9.3	18.9	10.3	10.3	14.3	0.0	14.6	15.3	0.0	15.1
Incr Delay (d2), s/veh	6.4	1.2	1.1	5.8	1.0	0.9	0.0	0.0	0.3	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.8	3.0	0.3	2.3	2.3	0.0	0.0	0.3	0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	10.5	10.4	24.6	11.3	11.3	14.4	0.0	14.9	15.6	0.0	15.8
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1206			827			43			171	
Approach Delay, s/veh		11.8			11.7			14.9			15.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	22.7		10.6	8.8	20.3		10.6				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	11.9	40.2		32.4	15.9	36.2		32.4				
Max Q Clear Time (g_c+I1), s	2.6	11.6		4.4	4.7	9.3		2.8				
Green Ext Time (p_c), s	0.0	5.3		0.7	0.3	3.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1090	742	15	3	13
Future Vol, veh/h	21	1090	742	15	3	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	1185	807	16	3	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	823	0	-	0	1454	412
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	639	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	803	-	-	-	121	589
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	803	-	-	-	117	589
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	488	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	803	-	-	-	335
HCM Lane V/C Ratio	0.028	-	-	-	0.052
HCM Control Delay (s)	9.6	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	949	112	112	698	12	48	0	48	19	0	8
Future Vol, veh/h	25	949	112	112	698	12	48	0	48	19	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	1032	122	122	759	13	52	0	52	21	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	1154	0	0	1771	-	577	1580	2218	386
Stage 1	-	-	-	-	-	-	1147	-	-	1010	1010	-
Stage 2	-	-	-	-	-	-	624	-	-	570	1208	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	839	-	-	601	-	-	53	0	460	73	43	612
Stage 1	-	-	-	-	-	-	212	0	-	257	316	-
Stage 2	-	-	-	-	-	-	440	0	-	474	254	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	839	-	-	601	-	-	~ 43	-	460	53	33	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 43	-	-	53	33	-
Stage 1	-	-	-	-	-	-	205	-	-	249	252	-
Stage 2	-	-	-	-	-	-	346	-	-	407	246	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	13.8	84.2
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	839	-	-	601	-	-	73
HCM Lane V/C Ratio	0.113	0.032	-	-	0.203	-	-	0.402
HCM Control Delay (s)	13.8	9.4	-	-	12.5	-	-	84.2
HCM Lane LOS	B	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.8	-	-	1.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

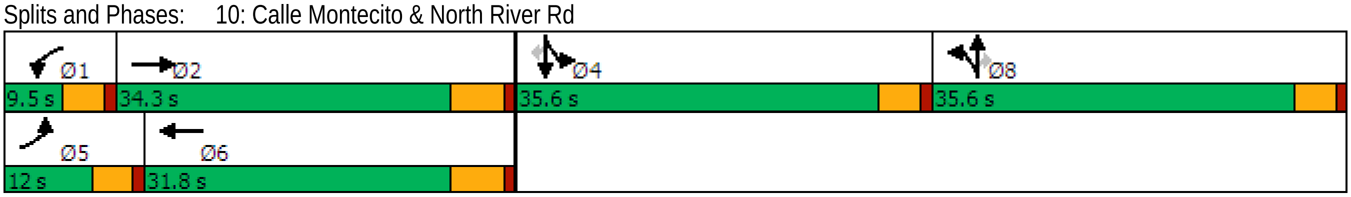
PM Existing + Cumulative + Project
10: Calle Montecito & North River Rd

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	126	845	8	734	2	32	1	59
Future Volume (vph)	126	845	8	734	2	32	1	59
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.4	5.2	27.2	10.0	10.0	13.5	13.5
Actuated g/C Ratio	0.10	0.49	0.07	0.35	0.13	0.13	0.17	0.17
v/c Ratio	0.78	0.54	0.08	0.83	0.12	0.12	0.49	0.18
Control Delay	67.9	20.4	44.1	32.8	31.8	0.8	35.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	20.4	44.1	32.8	31.8	0.8	35.6	1.9
LOS	E	C	D	C	C	A	D	A
Approach Delay		26.5		32.9	14.3		25.4	
Approach LOS		C		C	B		C	

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 78.7
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 28.8 — Intersection LOS: C
Intersection Capacity Utilization 59.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	845	10	8	734	183	23	2	32	135	1	59
Future Volume (veh/h)	126	845	10	8	734	183	23	2	32	135	1	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	918	11	9	798	199	25	2	35	147	1	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1554	19	21	974	243	168	13	161	224	2	201
Arrive On Green	0.10	0.43	0.43	0.01	0.35	0.35	0.10	0.10	0.10	0.13	0.13	0.13
Sat Flow, veh/h	1781	3596	43	1781	2818	703	1655	132	1585	1770	12	1585
Grp Volume(v), veh/h	137	454	475	9	503	494	27	0	35	148	0	64
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1744	1788	0	1585	1782	0	1585
Q Serve(g_s), s	4.4	11.5	11.5	0.3	15.3	15.3	0.8	0.0	1.2	4.7	0.0	2.2
Cycle Q Clear(g_c), s	4.4	11.5	11.5	0.3	15.3	15.3	0.8	0.0	1.2	4.7	0.0	2.2
Prop In Lane	1.00		0.02	1.00		0.40	0.93		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	175	768	805	21	614	603	181	0	161	226	0	201
V/C Ratio(X)	0.78	0.59	0.59	0.43	0.82	0.82	0.15	0.00	0.22	0.66	0.00	0.32
Avail Cap(c_a), veh/h	226	859	901	151	784	770	937	0	831	934	0	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	12.8	12.8	29.0	17.7	17.7	24.2	0.0	24.4	24.6	0.0	23.5
Incr Delay (d2), s/veh	12.6	0.9	0.8	13.7	5.5	5.6	0.4	0.0	0.7	3.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.1	4.3	0.2	6.4	6.3	0.3	0.0	0.5	2.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	13.7	13.6	42.7	23.1	23.2	24.6	0.0	25.1	27.8	0.0	24.4
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1066			1006			62			212	
Approach Delay, s/veh		16.9			23.3			24.9			26.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	31.2		12.1	10.3	26.1		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0
Max Q Clear Time (g_c+I1), s	2.3	13.5		6.7	6.4	17.3		3.2
Green Ext Time (p_c), s	0.0	3.7		0.8	0.0	3.1		0.2

Intersection Summary			
HCM 6th Ctrl Delay			20.8
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	108	915	849	49	0		
Future Volume (vph)	108	915	849	49	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	26.0	43.4	38.4	35.6	35.6	21.0	35.6
Total Split (%)	26.0%	43.4%	38.4%	35.6%	35.6%	21%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	10.4	36.4	24.9	10.9	10.9		
Actuated g/C Ratio	0.17	0.60	0.41	0.18	0.18		
v/c Ratio	0.39	0.47	0.69	0.21	0.16		
Control Delay	31.7	8.3	20.4	25.7	0.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	31.7	8.3	20.4	25.7	0.6		
LOS	C	A	C	C	A		
Approach Delay		10.7	20.4		9.4		
Approach LOS		B	C		A		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 61	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	915	0	0	849	62	0	0	0	49	0	90
Future Volume (veh/h)	108	915	0	0	849	62	0	0	0	49	0	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	995	0	0	923	67	0	0	0	53	0	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	2045	0	4	1283	93	0	260	0	415	0	221
Arrive On Green	0.09	0.58	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1781	3647	0	1781	3359	244	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	117	995	0	0	488	502	0	0	0	53	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1826	0	1870	0	1781	0	1585
Q Serve(g_s), s	2.8	7.1	0.0	0.0	10.1	10.1	0.0	0.0	0.0	1.1	0.0	2.4
Cycle Q Clear(g_c), s	2.8	7.1	0.0	0.0	10.1	10.1	0.0	0.0	0.0	1.1	0.0	2.4
Prop In Lane	1.00		0.00	1.00		0.13	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	2045	0	4	679	698	0	260	0	415	0	221
V/C Ratio(X)	0.74	0.49	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.13	0.00	0.44
Avail Cap(c_a), veh/h	889	3026	0	682	1307	1344	0	1345	0	1407	0	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.1	5.4	0.0	0.0	11.3	11.3	0.0	0.0	0.0	16.5	0.0	17.0
Incr Delay (d2), s/veh	6.5	0.2	0.0	0.0	1.5	1.4	0.0	0.0	0.0	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.6	0.0	0.0	3.3	3.4	0.0	0.0	0.0	0.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	5.6	0.0	0.0	12.8	12.8	0.0	0.0	0.0	16.6	0.0	18.4
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		1112			990			0			151	
Approach Delay, s/veh		7.7			12.8			0.0			17.8	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	31.5		11.6	8.3	23.2		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	16.5	36.7		30.0	21.5	31.7		* 31
Max Q Clear Time (g_c+I1), s	0.0	9.1		4.4	4.8	12.1		0.0
Green Ext Time (p_c), s	0.0	5.5		0.6	0.3	4.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

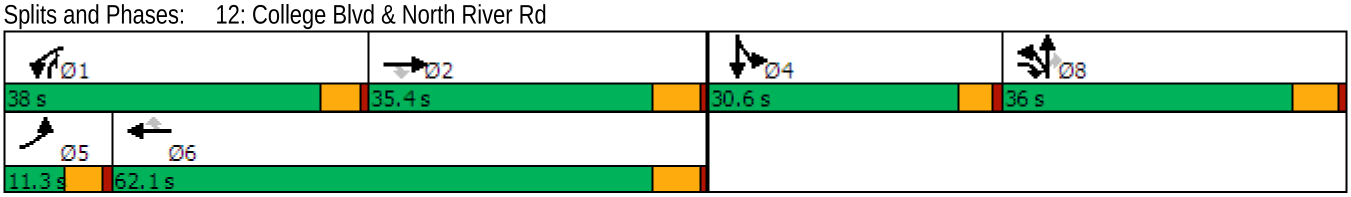
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	23	478	479	1085	424	58	30	1242	23	39
Future Volume (vph)	23	478	479	1085	424	58	30	1242	23	39
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.3	35.4	36.0	38.0	62.1	62.1	36.0	38.0	30.6	30.6
Total Split (%)	8.1%	25.3%	25.7%	27.1%	44.4%	44.4%	25.7%	27.1%	21.9%	21.9%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	21.8	53.9	33.4	54.0	54.0	30.7	70.0	10.7	10.7
Actuated g/C Ratio	0.05	0.19	0.47	0.29	0.47	0.47	0.27	0.61	0.09	0.09
v/c Ratio	0.27	0.78	0.55	1.19	0.28	0.08	1.15	0.68	0.15	0.26
Control Delay	65.5	54.3	5.5	132.3	21.7	1.7	131.1	8.8	51.4	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	54.3	5.5	132.3	21.7	1.7	131.1	8.8	51.4	51.7
LOS	E	D	A	F	C	A	F	A	D	D
Approach Delay		30.7			97.5		44.0			51.6
Approach LOS		C			F		D			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 115.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 60.4	Intersection LOS: E
Intersection Capacity Utilization 92.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	478	479	1085	424	58	471	30	1242	23	39	2
Future Volume (veh/h)	23	478	479	1085	424	58	471	30	1242	23	39	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	520	521	1179	461	63	512	33	1350	25	42	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	881	794	952	1776	792	425	27	1474	80	80	4
Arrive On Green	0.02	0.25	0.25	0.28	0.50	0.50	0.25	0.25	0.25	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1678	108	2790	1781	1771	84
Grp Volume(v), veh/h	25	520	521	1179	461	63	545	0	1350	25	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1786	0	1395	1781	0	1855
Q Serve(g_s), s	1.7	15.4	29.2	32.9	8.9	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Cycle Q Clear(g_c), s	1.7	15.4	29.2	32.9	8.9	2.5	30.2	0.0	30.2	1.6	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	42	881	794	952	1776	792	452	0	1474	80	0	84
V/C Ratio(X)	0.59	0.59	0.66	1.24	0.26	0.08	1.21	0.00	0.92	0.31	0.00	0.53
Avail Cap(c_a), veh/h	93	881	794	952	1776	792	452	0	1474	388	0	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.7	39.6	22.2	43.2	17.2	15.5	44.6	0.0	25.7	55.2	0.0	55.7
Incr Delay (d2), s/veh	12.7	1.0	2.0	116.2	0.1	0.0	112.0	0.0	9.2	2.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.8	16.2	29.3	3.6	0.9	27.3	0.0	18.6	0.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	40.6	24.1	159.5	17.2	15.6	156.6	0.0	35.0	57.4	0.0	60.8
LnGrp LOS	E	D	C	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		1066			1703			1895			69	
Approach Delay, s/veh		33.2			115.6			70.0			59.5	
Approach LOS		C			F			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	35.4		10.0	7.9	65.5		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	32.9	29.6		26.0	6.2	56.3		30.2				
Max Q Clear Time (g_c+I1), s	34.9	31.2		4.8	3.7	10.9		32.2				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	2.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			78.0									
HCM 6th LOS			E									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	80	95	1758	1474	55
Future Volume (vph)	28	80	95	1758	1474	55
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.1	6.9	57.8	42.1	42.1
Actuated g/C Ratio	0.16	0.23	0.10	0.83	0.60	0.60
v/c Ratio	0.10	0.23	0.31	0.65	0.75	0.06
Control Delay	29.5	19.8	38.3	8.2	15.7	5.9
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	29.5	19.8	38.3	8.3	15.7	5.9
LOS	C	B	D	A	B	A
Approach Delay	22.3			9.9	15.3	
Approach LOS	C			A	B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 70	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	80	95	1758	1474	55
Future Volume (veh/h)	28	80	95	1758	1474	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	87	103	1911	1602	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	302	275	2572	2001	892
Arrive On Green	0.11	0.11	0.08	0.72	0.56	0.56
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	30	87	103	1911	1602	60
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.0	3.0	1.8	20.2	22.5	1.1
Cycle Q Clear(g_c), s	1.0	3.0	1.8	20.2	22.5	1.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	197	302	275	2572	2001	892
V/C Ratio(X)	0.15	0.29	0.37	0.74	0.80	0.07
Avail Cap(c_a), veh/h	793	832	357	3482	2827	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	21.8	27.4	5.2	10.9	6.2
Incr Delay (d2), s/veh	0.4	0.5	0.8	0.6	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	0.7	4.2	7.2	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.6	22.3	28.3	5.8	12.1	6.3
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	117			2014	1662	
Approach Delay, s/veh	23.2			6.9	11.9	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.3		11.6	10.1	41.2
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		22.2		5.0	3.8	24.5
Green Ext Time (p_c), s		16.5		0.4	0.1	10.8

Intersection Summary		
HCM 6th Ctrl Delay		9.6
HCM 6th LOS		A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	149	20	49	10	30	74	1656	40	1434	117
Future Volume (vph)	149	20	49	10	30	74	1656	40	1434	117
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	12.0	51.5	11.8	51.3	51.3
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	12.0%	51.5%	11.8%	51.3%	51.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	16.7	16.7		16.7	16.7	7.0	46.9	6.5	44.3	44.3
Actuated g/C Ratio	0.21	0.21		0.21	0.21	0.09	0.58	0.08	0.55	0.55
v/c Ratio	0.59	0.25		0.23	0.08	0.53	0.64	0.30	0.80	0.14
Control Delay	39.0	11.1		29.5	0.4	54.0	15.2	45.9	21.6	6.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	39.0	11.1		29.5	0.4	54.0	15.2	45.9	21.7	6.6
LOS	D	B		C	A	D	B	D	C	A
Approach Delay		28.3		19.6			16.7		21.2	
Approach LOS		C		B			B		C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 80.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	20	73	49	10	30	74	1656	83	40	1434	117
Future Volume (veh/h)	149	20	73	49	10	30	74	1656	83	40	1434	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	22	79	53	11	33	80	1800	90	43	1559	127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	84	301	293	53	372	103	2626	131	69	1806	805
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.06	0.53	0.53	0.04	0.51	0.51
Sat Flow, veh/h	1362	357	1282	890	227	1585	1781	4981	249	1781	3554	1585
Grp Volume(v), veh/h	162	0	101	64	0	33	80	1229	661	43	1559	127
Grp Sat Flow(s),veh/h/ln	1362	0	1640	1117	0	1585	1781	1702	1826	1781	1777	1585
Q Serve(g_s), s	9.0	0.0	3.9	2.5	0.0	1.3	3.5	20.9	21.0	1.9	30.1	3.4
Cycle Q Clear(g_c), s	15.4	0.0	3.9	6.5	0.0	1.3	3.5	20.9	21.0	1.9	30.1	3.4
Prop In Lane	1.00		0.78	0.83		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	384	346	0	372	103	1795	962	69	1806	805
V/C Ratio(X)	0.54	0.00	0.26	0.18	0.00	0.09	0.78	0.69	0.69	0.62	0.86	0.16
Avail Cap(c_a), veh/h	537	0	671	585	0	649	157	1989	1067	153	2068	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	24.4	26.3	0.0	23.4	36.3	13.7	13.7	37.0	16.9	10.3
Incr Delay (d2), s/veh	1.5	0.0	0.4	0.3	0.0	0.1	12.4	0.9	1.6	8.8	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	1.5	1.0	0.0	0.5	1.8	7.3	8.1	1.0	11.7	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	0.0	24.8	26.5	0.0	23.5	48.7	14.6	15.3	45.8	20.5	10.4
LnGrp LOS	C	A	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		263			97			1970			1729	
Approach Delay, s/veh		30.1			25.5			16.2			20.4	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	47.0		23.0	9.6	45.5		23.0
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7
Max Green Setting (Gmax), s	6.7	45.7		* 32	6.9	45.5		* 32
Max Q Clear Time (g_c+I1), s	3.9	23.0		17.4	5.5	32.1		8.5
Green Ext Time (p_c), s	0.0	10.9		0.9	0.0	7.7		0.3

Intersection Summary		
HCM 6th Ctrl Delay		19.1
HCM 6th LOS		B

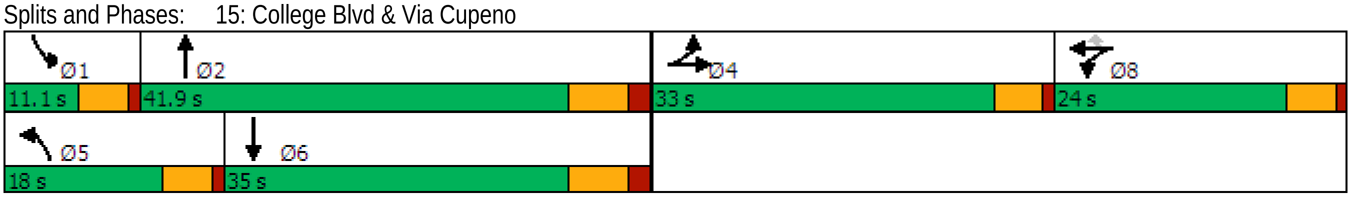
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	10	6	433	1568	2	1316
Future Volume (vph)	9	10	6	433	1568	2	1316
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	18.0	41.9	11.1	35.0
Total Split (%)	30.0%	21.8%	21.8%	16.4%	38.1%	10.1%	31.8%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	17.1	9.4	9.4	13.2	45.3	6.1	28.8
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.52	0.07	0.33
v/c Ratio	0.72	0.42	0.02	0.92	0.70	0.02	0.95
Control Delay	30.7	46.2	0.2	63.8	21.5	44.5	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	46.2	0.2	63.8	21.5	44.5	43.9
LOS	C	D	A	E	C	D	D
Approach Delay	30.7	42.5			30.2		43.9
Approach LOS	C	D			C		D

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 87.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 35.3	Intersection LOS: D
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

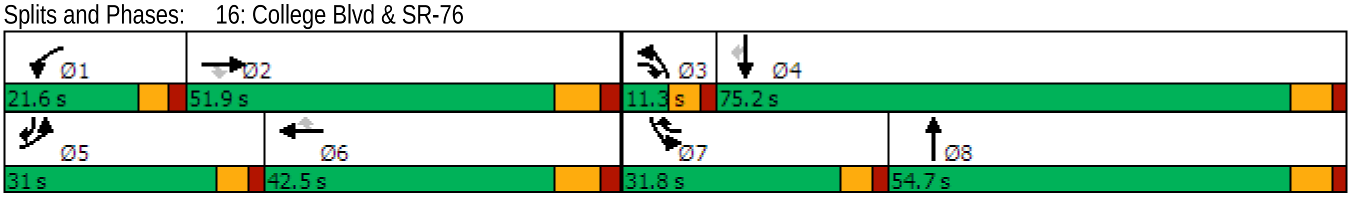


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	9	191	63	10	6	433	1568	101	2	1316	122
Future Volume (veh/h)	283	9	191	63	10	6	433	1568	101	2	1316	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	308	10	208	68	11	7	471	1704	110	2	1430	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	15	320	93	15	95	519	2312	149	6	1543	144
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.15	0.47	0.47	0.00	0.32	0.32
Sat Flow, veh/h	1781	73	1523	1543	250	1585	3456	4902	316	1781	4753	442
Grp Volume(v), veh/h	308	0	218	79	0	7	471	1183	631	2	1024	539
Grp Sat Flow(s),veh/h/ln	1781	0	1596	1793	0	1585	1728	1702	1813	1781	1702	1791
Q Serve(g_s), s	14.2	0.0	10.7	3.7	0.0	0.4	11.5	24.1	24.2	0.1	24.9	25.0
Cycle Q Clear(g_c), s	14.2	0.0	10.7	3.7	0.0	0.4	11.5	24.1	24.2	0.1	24.9	25.0
Prop In Lane	1.00		0.95	0.86		1.00	1.00		0.17	1.00		0.25
Lane Grp Cap(c), veh/h	374	0	335	108	0	95	519	1606	855	6	1105	582
V/C Ratio(X)	0.82	0.00	0.65	0.73	0.00	0.07	0.91	0.74	0.74	0.34	0.93	0.93
Avail Cap(c_a), veh/h	581	0	521	397	0	351	519	1606	855	125	1118	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	0.0	31.0	39.7	0.0	38.1	35.9	18.4	18.4	42.7	28.0	28.0
Incr Delay (d2), s/veh	5.5	0.0	2.1	9.3	0.0	0.3	19.7	1.8	3.4	31.9	12.8	20.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	4.2	1.9	0.0	0.1	6.2	9.2	10.2	0.1	11.6	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	0.0	33.2	49.0	0.0	38.4	55.5	20.2	21.8	74.6	40.8	48.8
LnGrp LOS	D	A	C	D	A	D	E	C	C	E	D	D
Approach Vol, veh/h		526			86			2285			1565	
Approach Delay, s/veh		36.0			48.1			27.9			43.6	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	47.3		23.0	18.0	34.7		10.1				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	35.1		28.0	12.9	28.2		19.0				
Max Q Clear Time (g_c+I1), s	2.1	26.2		16.2	13.5	27.0		5.7				
Green Ext Time (p_c), s	0.0	5.8		1.8	0.0	0.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			34.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	567	1357	58	332	928	668	51	843	572	788	444
Future Volume (vph)	567	1357	58	332	928	668	51	843	572	788	444
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	31.0	51.9	11.3	21.6	42.5	31.8	11.3	54.7	31.8	75.2	31.0
Total Split (%)	19.4%	32.4%	7.1%	13.5%	26.6%	19.9%	7.1%	34.2%	19.9%	47.0%	19.4%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	25.3	43.9	57.5	15.9	34.5	68.6	5.6	47.9	26.1	68.4	100.5
Actuated g/C Ratio	0.16	0.27	0.36	0.10	0.22	0.43	0.04	0.30	0.16	0.43	0.63
v/c Ratio	1.14	1.06	0.10	1.06	0.92	0.98	0.46	1.26	1.11	0.57	0.47
Control Delay	140.2	95.4	1.1	131.3	75.0	67.7	88.2	170.1	131.3	36.4	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	140.2	95.4	1.1	131.3	75.0	67.7	88.2	170.1	131.3	36.4	14.8
LOS	F	F	A	F	E	E	F	F	F	D	B
Approach Delay		105.5			82.1			166.8		61.2	
Approach LOS		F			F			F		E	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 98.7	Intersection LOS: F
Intersection Capacity Utilization 108.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	567	1357	58	332	928	668	51	843	368	572	788	444
Future Volume (veh/h)	567	1357	58	332	928	668	51	843	368	572	788	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	616	1475	63	361	1009	726	55	916	400	622	857	483
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1401	476	343	1101	600	89	723	313	564	1552	943
Arrive On Green	0.16	0.27	0.27	0.10	0.22	0.22	0.03	0.30	0.30	0.16	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2414	1045	3456	3554	1585
Grp Volume(v), veh/h	616	1475	63	361	1009	726	55	672	644	622	857	483
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1682	1728	1777	1585
Q Serve(g_s), s	25.3	43.9	4.6	15.9	30.9	34.5	2.5	47.9	47.9	26.1	28.6	28.4
Cycle Q Clear(g_c), s	25.3	43.9	4.6	15.9	30.9	34.5	2.5	47.9	47.9	26.1	28.6	28.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	546	1401	476	343	1101	600	89	532	504	564	1552	943
V/C Ratio(X)	1.13	1.05	0.13	1.05	0.92	1.21	0.62	1.26	1.28	1.10	0.55	0.51
Avail Cap(c_a), veh/h	546	1401	476	343	1101	600	121	532	504	564	1552	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	58.0	40.8	72.1	61.3	49.7	77.1	56.0	56.1	66.9	33.5	18.9
Incr Delay (d2), s/veh	78.6	39.3	0.1	62.6	11.8	109.1	6.7	132.8	140.2	69.4	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	24.0	1.9	10.1	14.6	42.1	1.2	41.1	39.9	17.0	12.6	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	97.3	40.9	134.7	73.2	158.8	83.8	188.9	196.3	136.3	33.9	19.4
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	C	B
Approach Vol, veh/h		2154			2096			1371			1962	
Approach Delay, s/veh		109.6			113.4			188.1			62.8	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	51.9	9.8	76.7	31.0	42.5	31.8	54.7
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 16	43.9	* 5.6	68.4	* 25	34.5	* 26	47.9
Max Q Clear Time (g_c+I1), s	17.9	45.9	4.5	30.6	27.3	36.5	28.1	49.9
Green Ext Time (p_c), s	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		112.7
HCM 6th LOS		F

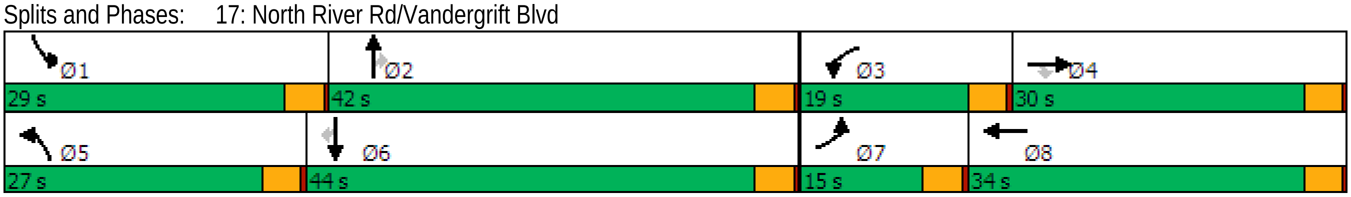
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	87	121	477	106	225	689	757	253	893	53
Future Volume (vph)	70	87	121	477	106	225	689	757	253	893	53
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	15.0	30.0	30.0	19.0	34.0	27.0	42.0	42.0	29.0	44.0	44.0
Total Split (%)	12.5%	25.0%	25.0%	15.8%	28.3%	22.5%	35.0%	35.0%	24.2%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.2	13.5	13.5	15.2	21.9	18.7	38.7	38.7	20.4	40.4	40.4
Actuated g/C Ratio	0.09	0.13	0.13	0.15	0.21	0.18	0.37	0.37	0.20	0.39	0.39
v/c Ratio	0.49	0.39	0.41	1.04	0.59	0.77	0.40	0.88	0.79	0.71	0.09
Control Delay	58.7	46.1	10.9	94.6	38.7	58.5	26.4	23.9	57.9	32.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	46.1	10.9	94.6	38.7	58.5	26.4	23.9	57.9	32.0	3.0
LOS	E	D	B	F	D	E	C	C	E	C	A
Approach Delay		34.0			77.2		29.6			36.1	
Approach LOS		C			E		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 40.5	Intersection LOS: D
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	87	121	477	106	109	225	689	757	253	893	53
Future Volume (veh/h)	70	87	121	477	106	109	225	689	757	253	893	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	95	132	518	115	118	245	749	823	275	971	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	205	174	534	177	181	283	2015	626	314	1464	653
Arrive On Green	0.06	0.11	0.11	0.15	0.21	0.21	0.16	0.39	0.39	0.18	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	3456	846	868	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	76	95	132	518	0	233	245	749	823	275	971	58
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1714	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	4.1	4.6	7.9	14.5	0.0	12.1	13.0	10.1	38.3	14.6	21.5	2.2
Cycle Q Clear(g_c), s	4.1	4.6	7.9	14.5	0.0	12.1	13.0	10.1	38.3	14.6	21.5	2.2
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	205	174	534	0	358	283	2015	626	314	1464	653
V/C Ratio(X)	0.77	0.46	0.76	0.97	0.00	0.65	0.87	0.37	1.32	0.88	0.66	0.09
Avail Cap(c_a), veh/h	202	501	424	534	0	530	422	2015	626	459	1464	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	40.5	42.0	40.8	0.0	35.1	39.8	20.8	29.4	38.9	23.1	17.4
Incr Delay (d2), s/veh	12.1	1.6	6.6	31.4	0.0	2.0	11.7	0.5	153.1	12.3	2.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.2	3.4	8.4	0.0	5.2	6.5	4.0	40.5	7.4	9.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	42.2	48.6	72.2	0.0	37.1	51.5	21.4	182.5	51.3	25.5	17.7
LnGrp LOS	E	D	D	E	A	D	D	C	F	D	C	B
Approach Vol, veh/h		303			751			1817			1304	
Approach Delay, s/veh		48.8			61.3			98.4			30.6	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	42.3	19.0	14.7	19.4	44.0	9.4	24.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	38.0	15.0	26.0	23.0	40.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	16.6	40.3	16.5	9.9	15.0	23.5	6.1	14.1
Green Ext Time (p_c), s	0.5	0.0	0.0	0.8	0.4	6.6	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	66.9
HCM 6th LOS	E

Appendix L

SANDAG Series 12 Select Zone Assignment (Proposed Network)

SANDAG Series 12
2035 Highway Network
Select Zone Assignment

OCEANSIDE Area

Model Run 11/15/18
SR12 V3 2035 RC Base
2035 - Revenue Constrained

Forecasted Volumes:

- # Unadjusted Volume (in Thousands)
- # Select Link Volume
- # Select Link Percentage
- # Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

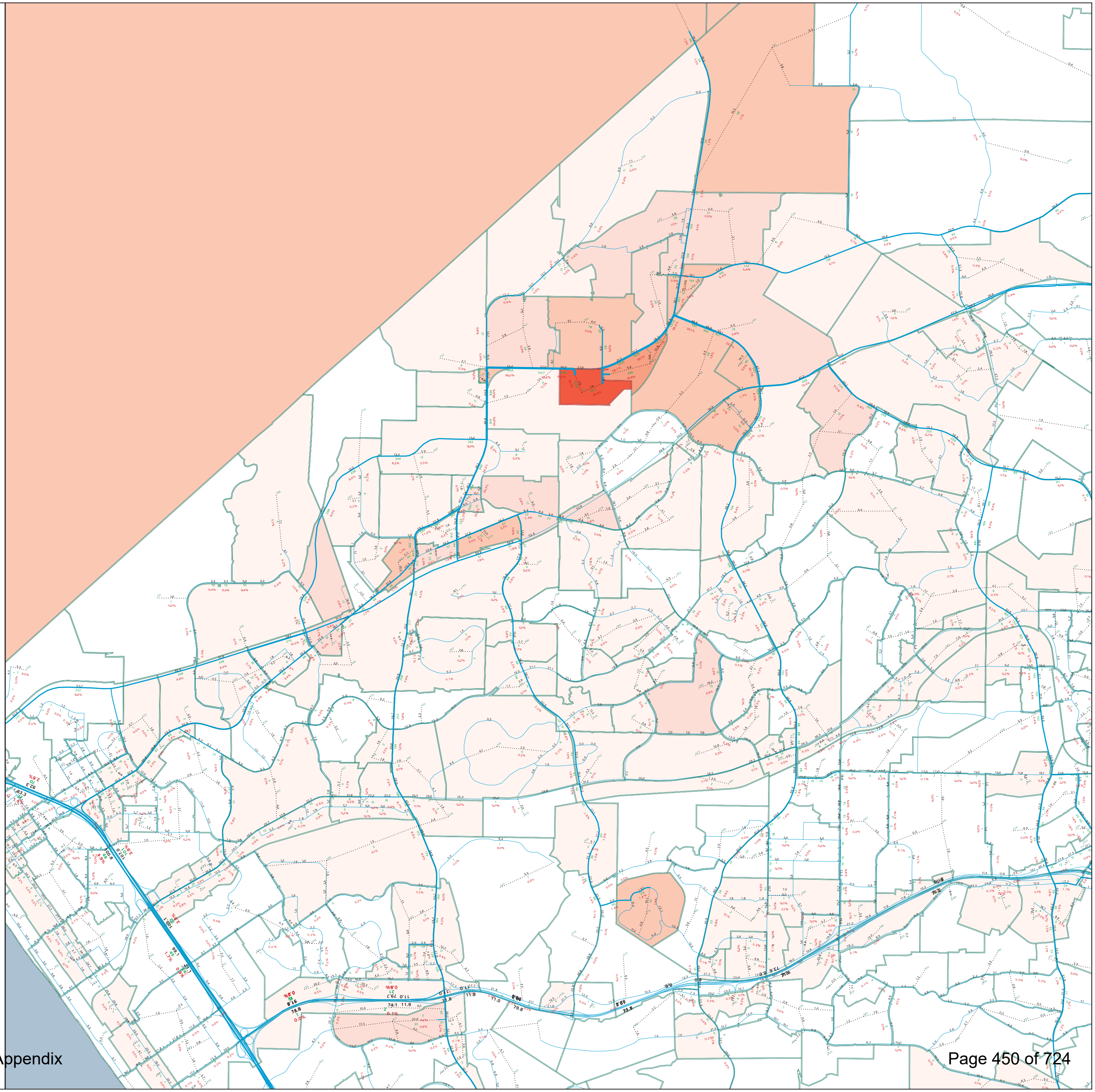
Zonal Distributions:

- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 1,000 2,000
Meters 120 360 600

San Diego's Regional Planning Agency

November 16, 2018



Appendix M

Horizon Year 2035 Base MTP Segment Adjustments

2035 Base-MTP (new segments: Pala, Melrose) Post-Processing ADT Adjustr

Segment	2018 ADT	2018 Cap.	2018 LOS	2030 Circ. Element MTP + Project ADT	2030 Cap.	2030 LOS	2035 Post-Processing Adjustments MTP + N.River Farms + Project ADT		2035 Cap.	2035 LOS
Douglas Drive										
N. River Rd to Rainier Way	35,915	40,000	E	39,068	50,000	C	43,400	10%	50,000	D
Rainier Way to Pala Rd	36,579	40,000	E	39,068	50,000	C	43,400	10%	50,000	D
Pala Rd to El Camino Real	37,080	40,000	E	39,968	50,000	C	43,400	8%	50,000	D
El Camino Real to Mission Ave	23,305	30,000	D	24,828	40,000	C	24,900	0%	40,000	C
Mission Ave to SR-76	20,142	40,000	B	24,444	40,000	C	26,000	6%	40,000	C
North River Road										
Douglas Dr to Avenida Descanso	20,223	40,000	B	25,000	40,000	C	27,000	7%	40,000	C
Ave. Descanso to Riverview Way	18,195	40,000	B	25,000	40,000	C	27,000	7%	40,000	C
Riverview Way to Calle Montecito	19,589	40,000	B	25,000	40,000	C	27,900	10%	40,000	C
Calle Montecito to Redondo Dr	20,485	40,000	B	25,000	40,000	C	25,000	0%	40,000	C
Redondo Dr to College Blvd	20,383	40,000	B	24,840	40,000	C	25,000	1%	40,000	C
College Blvd to Vandergrift Blvd	31,503	45,000	C	38,620	45,000	D	39,000	1%	45,000	D
College Blvd										
N. River Rd to Buchanon Park	35,485	40,000	E	43,320	40,000	D	44,000	2%	50,000	D
Buchanon Park to Adams St	34,426	40,000	D	43,320	40,000	D	44,000	2%	50,000	D
Adams St to Via Cupeno	34,479	50,000	C	43,288	50,000	D	44,000	2%	50,000	D
Via Cupeno to SR-76	41,981	50,000	D	43,192	50,000	D	44,000	2%	50,000	D
SR-76										
Foussat Rd to Douglas Dr	41,500	60,000	C	60,312	60,000	F	61,000	1%	60,000	F
Douglas Dr to Rancho Del Oro	46,500	60,000	C	54,132	60,000	D	54,800	1%	60,000	D
Frazee Rd to College Blvd	41,000	60,000	C	51,532	60,000	D	52,700	2%	60,000	D
College Blvd to N. Santa Fe	46,000	60,000	C	56,488	60,000	E	57,000	1%	60,000	E

% change from Circ Elem.

Appendix N

Horizon Year 2035 Growth Factor Calculations

Growth Factors Calcualted btw Existing and 2035 Base & Alt Scenarios

Segment	Existing Volume	2035 Base	Growth Factor	2035 Alt	Growth Factor
Douglas Drive		**Average**	**15.3%**	**Average**	**17.1%**
N. River Rd to Rainier Way	35,915	43,400	17.2%	44,000	18.4%
Rainier Way to Pala Rd	36,579	43,400	15.7%	44,000	16.9%
Pala Rd to El Camino Real	37,080	43,400	14.6%	44,000	15.7%
El Camino Real to Mission Ave	23,305	24,900	6.4%	26,000	10.4%
Mission Ave to SR-76	20,142	26,000	22.5%	26,600	24.3%
North River Road		**Average**	**23.9%**	**Average**	**28.7%**
Douglas Dr to Avenida Descanso	20,223	27,000	25.1%	28,300	28.5%
Avenida Descanso to Riverview Way	18,195	27,000	32.6%	28,300	35.7%
Riverview Way to Calle Montecito	19,589	27,900	29.8%	28,300	30.8%
Calle Montecito to Redondo Dr	20,485	25,000	18.1%	28,300	27.6%
Redondo Dr to College Blvd	20,383	25,000	18.5%	27,000	24.5%
College Blvd to Vandergrift Blvd	31,503	39,000	19.2%	42,000	25.0%
College Blvd		**Average**	**16.8%**	**Average**	**22.1%**
N. River Rd to Buchanon Park	35,485	44,000	19.4%	47,000	24.5%
Buchanon Park to Adams St	34,426	44,000	21.8%	47,000	26.8%
Adams St to Via Cupeno	34,479	44,000	21.6%	47,000	26.6%
Via Cupeno to SR-76	41,981	44,000	4.6%	47,000	10.7%

Appendix O

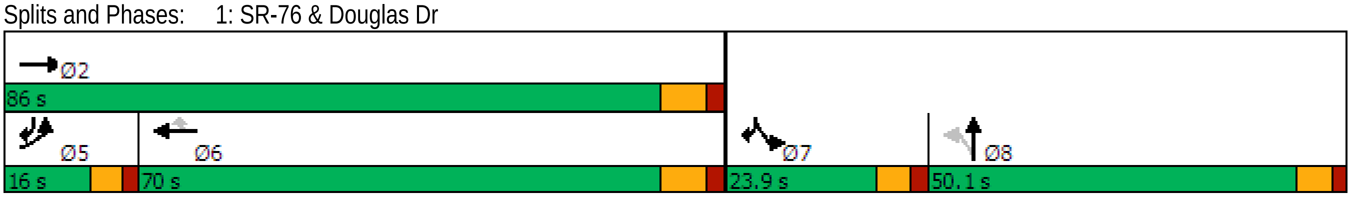
Horizon Year 2035 Base MTP Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	297	1110	2170	239	278	598	
Future Volume (vph)	297	1110	2170	239	278	598	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	10.3	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	16.0	33.0	33.0	33.0	22.1		50.1
Total Split (s)	16.0	86.0	70.0	70.0	23.9		50.1
Total Split (%)	10.0%	53.8%	43.8%	43.8%	14.9%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	10.3	78.0	62.0	62.0	17.8	34.2	
Actuated g/C Ratio	0.09	0.71	0.56	0.56	0.16	0.31	
v/c Ratio	1.01	0.48	1.18	0.26	1.06	0.50	
Control Delay	102.1	7.8	112.3	3.0	113.8	3.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	102.1	7.8	112.3	3.0	113.8	3.7	
LOS	F	A	F	A	F	A	
Approach Delay		27.7	101.4				
Approach LOS		C	F				

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 109.9
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 67.6 Intersection LOS: E
Intersection Capacity Utilization 98.7% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-76 & Douglas Dr



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	1110	0	0	2170	239	0	0	0	278	0	598
Future Volume (veh/h)	297	1110	0	0	2170	239	0	0	0	278	0	598
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	323	1207	0	0	2359	260	0	0	0	302	0	650
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	324	2522	0	0	2005	894	0	2	0	289	0	0
Arrive On Green	0.09	0.71	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.16	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	302	
Grp Volume(v), veh/h	323	1207	0	0	2359	260	0	0	0	302	111.8	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	10.3	16.4	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Cycle Q Clear(g_c), s	10.3	16.4	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	324	2522	0	0	2005	894	0	2	0	289		
V/C Ratio(X)	1.00	0.48	0.00	0.00	1.18	0.29	0.00	0.00	0.00	1.05		
Avail Cap(c_a), veh/h	324	2522	0	0	2005	894	0	749	0	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	49.8	7.0	0.0	0.0	23.9	12.5	0.0	0.0	0.0	46.1		
Incr Delay (d2), s/veh	49.2	0.1	0.0	0.0	85.1	0.2	0.0	0.0	0.0	65.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.6	5.5	0.0	0.0	47.6	3.3	0.0	0.0	0.0	13.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.0	7.2	0.0	0.0	109.0	12.7	0.0	0.0	0.0	111.8		
LnGrp LOS	F	A	A	A	F	B	A	A	A	F		
Approach Vol, veh/h		1530			2619			0				
Approach Delay, s/veh		26.5			99.5			0.0				
Approach LOS		C			F							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		86.0			16.0	70.0	23.9	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		78.0			* 10	62.0	17.8	44.0				
Max Q Clear Time (g_c+I1), s		18.4			12.3	64.0	19.8	0.0				
Green Ext Time (p_c), s		7.8			0.0	0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		75.2
HCM 6th LOS		E

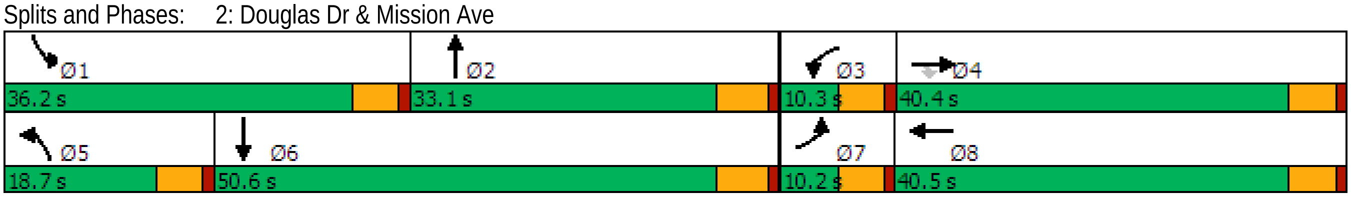
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	79	310	70	60	530	130	356	430	806
Future Volume (vph)	79	310	70	60	530	130	356	430	806
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.2	40.4	40.4	10.3	40.5	18.7	33.1	36.2	50.6
Total Split (%)	8.5%	33.7%	33.7%	8.6%	33.8%	15.6%	27.6%	30.2%	42.2%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.2	30.1	30.1	5.3	32.8	12.4	19.5	31.6	38.7
Actuated g/C Ratio	0.05	0.28	0.28	0.05	0.30	0.11	0.18	0.29	0.36
v/c Ratio	0.52	0.34	0.14	0.76	0.89	0.70	0.62	0.91	0.77
Control Delay	65.8	32.3	0.5	101.6	41.9	67.4	45.8	62.0	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	32.3	0.5	101.6	41.9	67.4	45.8	62.0	36.4
LOS	E	C	A	F	D	E	D	E	D
Approach Delay		33.2			45.6		51.4		44.7
Approach LOS		C			D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	310	70	60	530	375	130	356	10	430	806	86
Future Volume (veh/h)	79	310	70	60	530	375	130	356	10	430	806	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	337	76	65	576	408	141	387	11	467	876	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1131	504	83	635	450	176	492	14	503	1046	111
Arrive On Green	0.05	0.32	0.32	0.05	0.32	0.32	0.10	0.14	0.14	0.28	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	1781	1987	1407	1781	3529	100	1781	3241	344
Grp Volume(v), veh/h	86	337	76	65	515	469	141	195	203	467	480	489
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1617	1781	1777	1852	1781	1777	1808
Q Serve(g_s), s	2.4	7.2	3.4	3.6	27.9	27.9	7.8	10.6	10.7	25.6	25.2	25.2
Cycle Q Clear(g_c), s	2.4	7.2	3.4	3.6	27.9	27.9	7.8	10.6	10.7	25.6	25.2	25.2
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	156	1131	504	83	568	517	176	248	258	503	574	584
V/C Ratio(X)	0.55	0.30	0.15	0.78	0.91	0.91	0.80	0.79	0.79	0.93	0.84	0.84
Avail Cap(c_a), veh/h	176	1239	553	92	621	565	241	483	504	552	793	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	25.8	24.5	47.3	32.7	32.7	44.3	41.7	41.8	35.0	31.5	31.5
Incr Delay (d2), s/veh	3.0	0.1	0.1	31.0	16.2	17.5	12.5	5.4	5.3	21.3	5.7	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.0	1.3	2.3	14.2	13.1	4.0	5.0	5.2	13.8	11.4	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	25.9	24.6	78.3	48.9	50.2	56.8	47.2	47.1	56.3	37.3	37.2
LnGrp LOS	D	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		499			1049			539			1436	
Approach Delay, s/veh		29.9			51.3			49.7			43.4	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.4	19.8	9.8	37.3	15.0	38.2	9.6	37.5
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	31.1	27.3	5.2	35.0	13.6	44.8	5.1	35.1
Max Q Clear Time (g_c+I1), s	27.6	12.7	5.6	9.2	9.8	27.2	4.4	29.9
Green Ext Time (p_c), s	0.7	1.3	0.0	1.9	0.1	4.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

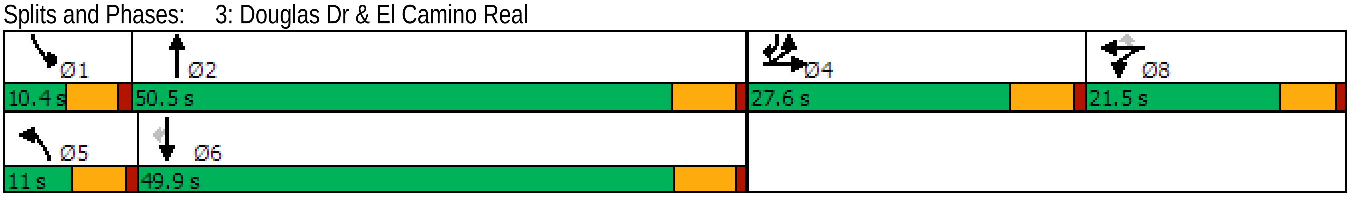
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	370	20	50	40	5	60	650	10	1221	1239
Future Volume (vph)	370	20	50	40	5	60	650	10	1221	1239
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	27.6	27.6		21.5	21.5	11.0	50.5	10.4	49.9	27.6
Total Split (%)	25.1%	25.1%		19.5%	19.5%	10.0%	45.9%	9.5%	45.4%	25.1%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	20.5	20.5	100.7	12.3	12.3	5.7	47.6	5.1	41.5	68.1
Actuated g/C Ratio	0.20	0.20	1.00	0.12	0.12	0.06	0.47	0.05	0.41	0.68
v/c Ratio	0.58	0.06	0.03	0.59	0.02	0.65	0.45	0.12	0.91	0.71
Control Delay	41.6	36.2	0.0	55.3	0.0	79.8	19.4	53.2	39.4	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	36.2	0.0	55.3	0.0	79.8	19.4	53.2	39.4	14.0
LOS	D	D	A	E	A	E	B	D	D	B
Approach Delay		36.7		53.3			24.2		26.7	
Approach LOS		D		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 100.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	20	50	80	40	5	60	650	40	10	1221	1239
Future Volume (veh/h)	370	20	50	80	40	5	60	650	40	10	1221	1239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	22	0	87	43	5	65	707	43	11	1327	1347
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	512	277		111	55	145	84	1687	103	24	1642	1702
Arrive On Green	0.15	0.15	0.00	0.09	0.09	0.09	0.05	0.50	0.50	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1211	599	1585	1781	3403	207	1781	3554	2790
Grp Volume(v), veh/h	402	22	0	130	0	5	65	369	381	11	1327	1347
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1833	1781	1777	1395
Q Serve(g_s), s	10.4	0.9	0.0	6.5	0.0	0.3	3.3	12.3	12.3	0.6	29.7	33.7
Cycle Q Clear(g_c), s	10.4	0.9	0.0	6.5	0.0	0.3	3.3	12.3	12.3	0.6	29.7	33.7
Prop In Lane	1.00		1.00	0.67		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	512	277		166	0	145	84	881	908	24	1642	1702
V/C Ratio(X)	0.78	0.08		0.78	0.00	0.03	0.78	0.42	0.42	0.46	0.81	0.79
Avail Cap(c_a), veh/h	798	432		312	0	274	108	881	908	96	1683	1735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	34.0	0.0	41.2	0.0	38.4	43.7	14.9	14.9	45.4	21.4	13.6
Incr Delay (d2), s/veh	2.8	0.1	0.0	7.9	0.0	0.1	23.3	0.3	0.3	13.5	3.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.4	0.0	3.2	0.0	0.1	2.0	4.8	4.9	0.3	12.3	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	34.1	0.0	49.1	0.0	38.5	67.0	15.2	15.2	58.9	24.4	16.1
LnGrp LOS	D	C		D	A	D	E	B	B	E	C	B
Approach Vol, veh/h		424	A		135			815			2685	
Approach Delay, s/veh		40.5			48.7			19.3			20.4	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	52.1		19.9	9.7	49.0		14.0				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	44.3		21.4	5.6	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.6	14.3		12.4	5.3	35.7		8.5				
Green Ext Time (p_c), s	0.0	3.3		1.3	0.0	7.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	5	110	10	5	50	990	20	20	2160	60
Future Volume (vph)	75	5	110	10	5	50	990	20	20	2160	60
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	82.4	21.0	11.5	83.5	30.1
Total Split (%)	20.8%	20.8%	20.8%	14.5%	14.5%	7.2%	56.8%	14.5%	7.9%	57.6%	20.8%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.9	10.9	10.9	6.8	6.8	5.0	83.2	90.9	6.0	79.4	96.6
Actuated g/C Ratio	0.09	0.09	0.09	0.06	0.06	0.04	0.68	0.75	0.05	0.65	0.79
v/c Ratio	0.29	0.29	0.48	0.11	0.31	0.74	0.44	0.02	0.25	1.02	0.05
Control Delay	56.0	56.0	15.1	60.0	29.0	109.7	12.0	0.1	66.3	45.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	56.0	15.1	60.0	29.0	109.7	12.0	0.1	66.3	45.7	1.0
LOS	E	E	B	E	C	F	B	A	E	D	A
Approach Delay		32.3			36.0		16.3			44.7	
Approach LOS		C			D		B			D	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 121.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	5	110	10	5	30	50	990	20	20	2160	60
Future Volume (veh/h)	75	5	110	10	5	30	50	990	20	20	2160	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	0	120	11	5	33	54	1076	22	22	2348	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	0	153	72	9	56	69	2347	1111	39	2285	1172
Arrive On Green	0.10	0.00	0.10	0.04	0.04	0.04	0.04	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	86	0	120	11	0	38	54	1076	22	22	2348	65
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.7	0.0	8.9	0.7	0.0	2.8	3.6	17.7	0.5	1.5	77.3	1.3
Cycle Q Clear(g_c), s	2.7	0.0	8.9	0.7	0.0	2.8	3.6	17.7	0.5	1.5	77.3	1.3
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	343	0	153	72	0	65	69	2347	1111	39	2285	1172
V/C Ratio(X)	0.25	0.00	0.79	0.15	0.00	0.58	0.78	0.46	0.02	0.57	1.03	0.06
Avail Cap(c_a), veh/h	741	0	330	236	0	214	74	2347	1111	90	2285	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	0.0	53.1	55.7	0.0	56.7	57.2	9.9	5.5	58.2	21.5	4.3
Incr Delay (d2), s/veh	0.4	0.0	8.6	1.0	0.0	8.1	37.8	0.1	0.0	12.6	26.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.9	0.3	0.0	1.3	2.4	6.6	0.2	0.8	37.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	0.0	61.7	56.7	0.0	64.8	95.0	10.1	5.5	70.8	47.7	4.3
LnGrp LOS	D	A	E	E	A	E	F	B	A	E	F	A
Approach Vol, veh/h		206			49			1152			2435	
Approach Delay, s/veh		57.1			63.0			14.0			46.7	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	85.6		16.7	10.1	83.5		9.9
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	6.1	76.2		25.0	5.0	77.3		15.9
Max Q Clear Time (g_c+I1), s	3.5	19.7		10.9	5.6	79.3		4.8
Green Ext Time (p_c), s	0.0	6.7		0.7	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	20	5	130	80	5	10	1075	40	5	2030	40
Future Volume (vph)	20	5	130	80	5	10	1075	40	5	2030	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	73.0	73.0	10.4	83.4	83.4
Total Split (%)	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	60.8%	60.8%	8.7%	69.5%	69.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		14.3	14.3		14.3	14.3	70.8	70.8	5.1	72.5	72.5
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.72	0.72	0.05	0.74	0.74
v/c Ratio		0.13	0.47		0.47	0.04	0.46	0.04	0.05	0.85	0.04
Control Delay		37.7	22.4		46.8	0.2	8.5	1.5	52.6	14.9	4.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		37.7	22.4		46.8	0.2	8.5	1.5	52.6	14.9	4.0
LOS		D	C		D	A	A	A	D	B	A
Approach Delay		24.8			41.8		8.2			14.8	
Approach LOS		C			D		A			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	130	80	5	10	0	1075	40	5	2030	40
Future Volume (veh/h)	20	5	130	80	5	10	0	1075	40	5	2030	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	5	141	87	5	11	0	1168	43	5	2207	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	55	7	424	59	2	424	0	2083	929	11	2267	1011
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.00	0.59	0.59	0.01	0.64	0.64
Sat Flow, veh/h	0	27	1585	0	7	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	27	0	141	92	0	11	0	1168	43	5	2207	43
Grp Sat Flow(s),veh/h/ln	27	0	1585	7	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	8.5	0.0	0.0	0.6	0.0	24.2	1.4	0.3	71.0	1.2
Cycle Q Clear(g_c), s	32.0	0.0	8.5	32.0	0.0	0.6	0.0	24.2	1.4	0.3	71.0	1.2
Prop In Lane	0.81		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	0	424	60	0	424	0	2083	929	11	2267	1011
V/C Ratio(X)	0.44	0.00	0.33	1.52	0.00	0.03	0.00	0.56	0.05	0.44	0.97	0.04
Avail Cap(c_a), veh/h	62	0	424	60	0	424	0	2083	929	74	2280	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	35.2	58.8	0.0	32.3	0.0	15.2	10.5	59.2	20.7	8.1
Incr Delay (d2), s/veh	4.8	0.0	0.5	302.3	0.0	0.0	0.0	0.3	0.0	24.3	13.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.4	6.9	0.0	0.2	0.0	9.5	0.5	0.2	30.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.0	35.6	361.1	0.0	32.3	0.0	15.6	10.5	83.5	33.9	8.1
LnGrp LOS	E	A	D	F	A	C	A	B	B	F	C	A
Approach Vol, veh/h		168			103			1211			2255	
Approach Delay, s/veh		38.9			326.0			15.4			33.5	
Approach LOS		D			F			B			C	

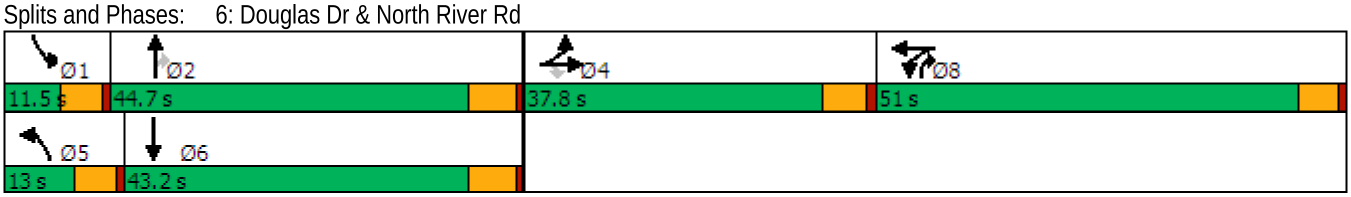
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	76.8		36.6		83.0		36.6				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	66.3		32.0		76.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	26.2		34.0		73.0		34.0				
Green Ext Time (p_c), s	0.0	7.6		0.0		3.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		35.9
HCM 6th LOS		D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	109	220	990	48	80	500	405	20	810
Future Volume (vph)	60	109	220	990	48	80	500	405	20	810
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	51.0	51.0	13.0	44.7	51.0	11.5	43.2
Total Split (%)	26.1%	26.1%	26.1%	35.2%	35.2%	9.0%	30.8%	35.2%	7.9%	29.8%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	18.9	18.9	18.9	45.8	45.8	7.6	43.5	92.4	6.0	37.1
Actuated g/C Ratio	0.14	0.14	0.14	0.35	0.35	0.06	0.33	0.70	0.05	0.28
v/c Ratio	0.26	0.23	0.76	0.97	0.92dl	0.86	0.47	0.21	0.28	0.90
Control Delay	51.6	50.2	45.0	74.1	38.0	119.7	39.2	0.9	73.0	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	50.2	45.0	74.1	38.0	119.7	39.2	0.9	73.0	59.1
LOS	D	D	D	E	D	F	D	A	E	E
Approach Delay		47.4			54.9		30.0			59.4
Approach LOS		D			D		C			E

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 132.3	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 47.7	Intersection LOS: D
Intersection Capacity Utilization 78.3%	ICU Level of Service D
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	109	220	990	48	20	80	500	405	20	810	10
Future Volume (veh/h)	60	109	220	990	48	20	80	500	405	20	810	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	118	239	1076	52	22	87	543	440	22	880	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	627	280	1158	406	172	102	1085	1759	37	967	12
Arrive On Green	0.18	0.18	0.18	0.54	0.33	0.33	0.06	0.31	0.51	0.02	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	3563	1248	528	1781	3554	2790	1781	3594	45
Grp Volume(v), veh/h	65	118	239	1076	0	74	87	543	440	22	435	456
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1775	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	4.1	3.7	19.4	36.9	0.0	3.9	6.4	16.6	7.4	1.6	31.4	31.4
Cycle Q Clear(g_c), s	4.1	3.7	19.4	36.9	0.0	3.9	6.4	16.6	7.4	1.6	31.4	31.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	314	627	280	1158	0	577	102	1085	1759	37	478	501
V/C Ratio(X)	0.21	0.19	0.85	0.93	0.00	0.13	0.85	0.50	0.25	0.59	0.91	0.91
Avail Cap(c_a), veh/h	430	859	383	1227	0	611	102	1085	1759	82	496	520
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	46.5	52.9	28.9	0.0	31.5	61.9	37.7	7.3	64.3	46.9	46.9
Incr Delay (d2), s/veh	0.5	0.2	14.8	12.2	0.0	0.1	45.8	0.8	0.2	13.9	21.6	20.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.7	8.9	15.0	0.0	1.7	4.2	7.4	4.0	0.9	16.7	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	46.7	67.7	41.1	0.0	31.6	107.7	38.5	7.5	78.2	68.4	67.7
LnGrp LOS	D	D	E	D	A	C	F	D	A	E	E	E
Approach Vol, veh/h		422			1150			1070			913	
Approach Delay, s/veh		58.7			40.5			31.4			68.3	
Approach LOS		E			D			C			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	46.7		29.2	13.0	41.8		48.5
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	6.1	38.5		32.0	7.6	37.0		45.6
Max Q Clear Time (g_c+I1), s	3.6	18.6		21.4	8.4	33.4		38.9
Green Ext Time (p_c), s	0.0	9.3		2.0	0.0	2.2		4.2

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

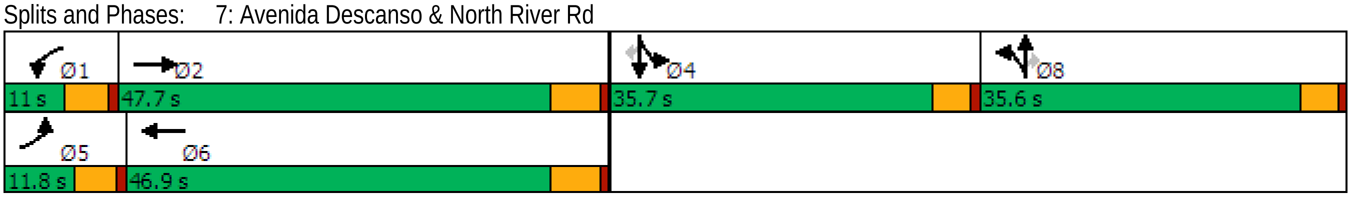
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	524	20	948	5	40	10	130
Future Volume (vph)	60	524	20	948	5	40	10	130
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6
Total Split (s)	11.8	47.7	11.0	46.9	35.6	35.6	35.7	35.7
Total Split (%)	9.1%	36.7%	8.5%	36.1%	27.4%	27.4%	27.5%	27.5%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.2	40.7	6.3	35.3	9.9	9.9	15.1	15.1
Actuated g/C Ratio	0.08	0.48	0.07	0.41	0.12	0.12	0.18	0.18
v/c Ratio	0.44	0.35	0.17	0.75	0.05	0.16	0.52	0.39
Control Delay	55.0	18.5	50.7	28.1	38.0	1.2	41.3	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	18.5	50.7	28.1	38.0	1.2	41.3	15.5
LOS	D	B	D	C	D	A	D	B
Approach Delay		22.2		28.5	8.1		29.3	
Approach LOS		C		C	A		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 85.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	524	10	20	948	50	5	5	40	140	10	130
Future Volume (veh/h)	60	524	10	20	948	50	5	5	40	140	10	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	570	11	22	1030	54	5	5	43	152	11	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	1462	28	45	1309	69	89	89	155	232	17	221
Arrive On Green	0.05	0.41	0.41	0.03	0.38	0.38	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	3566	69	1781	3435	180	912	912	1585	1666	121	1585
Grp Volume(v), veh/h	65	284	297	22	533	551	10	0	43	163	0	141
Grp Sat Flow(s),veh/h/ln	1781	1777	1858	1781	1777	1838	1825	0	1585	1787	0	1585
Q Serve(g_s), s	2.2	6.9	6.9	0.7	16.3	16.3	0.3	0.0	1.5	5.3	0.0	5.2
Cycle Q Clear(g_c), s	2.2	6.9	6.9	0.7	16.3	16.3	0.3	0.0	1.5	5.3	0.0	5.2
Prop In Lane	1.00		0.04	1.00		0.10	0.50		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	97	729	762	45	677	700	178	0	155	249	0	221
V/C Ratio(X)	0.67	0.39	0.39	0.48	0.79	0.79	0.06	0.00	0.28	0.66	0.00	0.64
Avail Cap(c_a), veh/h	194	1213	1268	171	1190	1231	922	0	801	906	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	12.7	12.7	29.5	16.8	16.8	25.1	0.0	25.7	25.0	0.0	25.0
Incr Delay (d2), s/veh	7.7	0.3	0.3	7.8	2.1	2.0	0.1	0.0	1.0	2.9	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.5	2.6	0.4	6.2	6.4	0.1	0.0	0.6	2.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	13.0	13.0	37.3	18.9	18.8	25.2	0.0	26.6	27.9	0.0	28.0
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		646			1106			53			304	
Approach Delay, s/veh		15.4			19.2			26.4			28.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	31.0		13.1	8.4	29.2		10.6
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	5.9	41.9		31.1	6.7	41.1		31.0
Max Q Clear Time (g_c+I1), s	2.7	8.9		7.3	4.2	18.3		3.5
Green Ext Time (p_c), s	0.0	2.4		1.2	0.0	5.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	684	1028	10	10	30
Future Vol, veh/h	10	684	1028	10	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	743	1117	11	11	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1128	0	-	0	1517	564
Stage 1	-	-	-	-	1123	-
Stage 2	-	-	-	-	394	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	615	-	-	-	110	469
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	615	-	-	-	108	469
Mov Cap-2 Maneuver	-	-	-	-	108	-
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	615	-	-	-	255
HCM Lane V/C Ratio	0.018	-	-	-	0.171
HCM Control Delay (s)	11	-	-	-	22
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	700	0	0	1090	10	0	0	0	20	0	50
Future Vol, veh/h	30	700	0	0	1090	10	0	0	0	20	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	761	0	0	1185	11	0	0	0	22	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1196	0	0	761	0	0	-	-	381	1638	2018	598
Stage 1	-	-	-	-	-	-	-	-	-	1191	1191	-
Stage 2	-	-	-	-	-	-	-	-	-	447	827	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	579	-	-	847	-	-	0	0	617	66	58	445
Stage 1	-	-	-	-	-	-	0	0	-	199	259	-
Stage 2	-	-	-	-	-	-	0	0	-	560	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	847	-	-	-	-	617	63	55	445
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	63	55	-
Stage 1	-	-	-	-	-	-	-	-	-	188	259	-
Stage 2	-	-	-	-	-	-	-	-	-	528	362	-

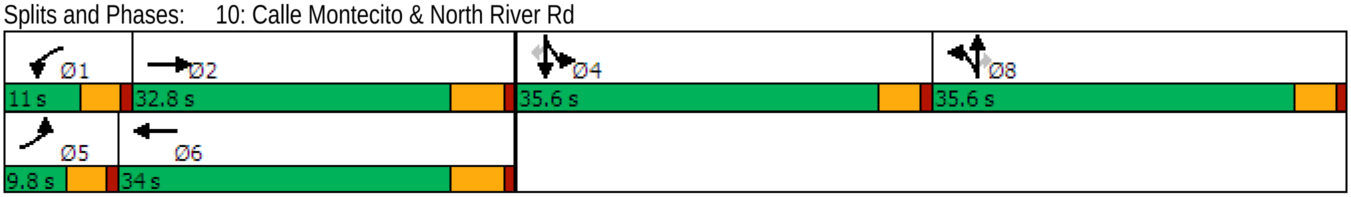
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	0	45.1
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	579	-	-	847	-	-	163
HCM Lane V/C Ratio	-	0.056	-	-	-	-	-	0.467
HCM Control Delay (s)	0	11.6	-	-	0	-	-	45.1
HCM Lane LOS	A	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	2.2

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	528	40	874	5	10	5	130
Future Volume (vph)	60	528	40	874	5	10	5	130
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.5	31.1	6.5	29.6	9.9	9.9	17.7	17.7
Actuated g/C Ratio	0.07	0.39	0.08	0.37	0.12	0.12	0.22	0.22
v/c Ratio	0.54	0.45	0.30	0.84	0.07	0.04	0.68	0.32
Control Delay	59.0	23.9	47.0	33.4	32.8	0.2	39.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	23.9	47.0	33.4	32.8	0.2	39.6	11.2
LOS	E	C	D	C	C	A	D	B
Approach Delay		27.3		33.9	19.5		29.8	
Approach LOS		C		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.5	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	528	30	40	874	120	10	5	10	240	5	130
Future Volume (veh/h)	60	528	30	40	874	120	10	5	10	240	5	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	574	33	43	950	130	11	5	11	261	5	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	1266	73	74	1128	154	115	52	146	344	7	312
Arrive On Green	0.05	0.37	0.37	0.04	0.36	0.36	0.09	0.09	0.09	0.20	0.20	0.20
Sat Flow, veh/h	1781	3416	196	1781	3140	430	1243	565	1585	1749	34	1585
Grp Volume(v), veh/h	65	298	309	43	537	543	16	0	11	266	0	141
Grp Sat Flow(s),veh/h/ln	1781	1777	1835	1781	1777	1793	1808	0	1585	1783	0	1585
Q Serve(g_s), s	2.3	8.2	8.3	1.5	18.1	18.1	0.5	0.0	0.4	9.2	0.0	5.1
Cycle Q Clear(g_c), s	2.3	8.2	8.3	1.5	18.1	18.1	0.5	0.0	0.4	9.2	0.0	5.1
Prop In Lane	1.00		0.11	1.00		0.24	0.69		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	95	659	680	74	638	644	167	0	146	351	0	312
V/C Ratio(X)	0.69	0.45	0.45	0.58	0.84	0.84	0.10	0.00	0.08	0.76	0.00	0.45
Avail Cap(c_a), veh/h	145	741	765	178	774	781	863	0	756	850	0	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	15.5	15.5	30.6	19.1	19.1	27.0	0.0	27.0	24.6	0.0	23.0
Incr Delay (d2), s/veh	8.5	0.5	0.5	7.0	7.1	7.1	0.2	0.0	0.2	3.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.1	3.2	0.8	8.0	8.0	0.2	0.0	0.2	4.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	15.9	15.9	37.6	26.3	26.2	27.3	0.0	27.2	28.0	0.0	24.0
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		672			1123			27			407	
Approach Delay, s/veh		18.2			26.7			27.2			26.6	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	29.8		17.4	8.0	29.0		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0				
Max Q Clear Time (g_c+I1), s	3.5	10.3		11.2	4.3	20.1		2.5				
Green Ext Time (p_c), s	0.0	2.3		1.6	0.0	3.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			24.1
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	30	778	977	5	0	100	0	
Future Volume (vph)	30	778	977	5	0	100	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.4	30.7	27.3		14.0	12.8	12.8	
Actuated g/C Ratio	0.13	0.53	0.47		0.24	0.22	0.22	
v/c Ratio	0.15	0.45	0.68		0.02	0.35	0.31	
Control Delay	34.7	9.0	15.8		0.1	26.1	6.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	34.7	9.0	15.8		0.1	26.1	6.1	
LOS	C	A	B		A	C	A	
Approach Delay		10.0	15.8		0.1		14.5	
Approach LOS		A	B		A		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 57.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 48.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	778	0	0	977	60	5	0	5	100	0	137
Future Volume (veh/h)	30	778	0	0	977	60	5	0	5	100	0	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	846	0	0	1062	65	5	0	5	109	0	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	2024	0	4	1467	90	168	35	82	411	0	247
Arrive On Green	0.04	0.57	0.00	0.00	0.43	0.43	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1781	3647	0	1781	3402	208	304	224	528	1411	0	1585
Grp Volume(v), veh/h	33	846	0	0	555	572	10	0	0	109	0	149
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1833	1057	0	0	1411	0	1585
Q Serve(g_s), s	0.8	6.0	0.0	0.0	11.5	11.6	0.0	0.0	0.0	0.0	0.0	3.9
Cycle Q Clear(g_c), s	0.8	6.0	0.0	0.0	11.5	11.6	3.9	0.0	0.0	2.5	0.0	3.9
Prop In Lane	1.00		0.00	1.00		0.11	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	67	2024	0	4	766	790	285	0	0	411	0	247
V/C Ratio(X)	0.49	0.42	0.00	0.00	0.72	0.72	0.04	0.00	0.00	0.27	0.00	0.60
Avail Cap(c_a), veh/h	299	3741	0	219	1791	1848	1051	0	0	1157	0	1084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	5.4	0.0	0.0	10.5	10.5	16.1	0.0	0.0	17.0	0.0	17.6
Incr Delay (d2), s/veh	5.5	0.1	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.3	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	0.0	0.0	3.7	3.8	0.1	0.0	0.0	0.9	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	5.6	0.0	0.0	11.8	11.8	16.1	0.0	0.0	17.3	0.0	20.0
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		879			1127			10			258	
Approach Delay, s/veh		6.4			11.8			16.1			18.9	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	32.2		12.6	6.2	26.0		12.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32				
Max Q Clear Time (g_c+I1), s	0.0	8.0		5.9	2.8	13.6		5.9				
Green Ext Time (p_c), s	0.0	4.6		1.0	0.0	5.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			10.5
HCM 6th LOS			B

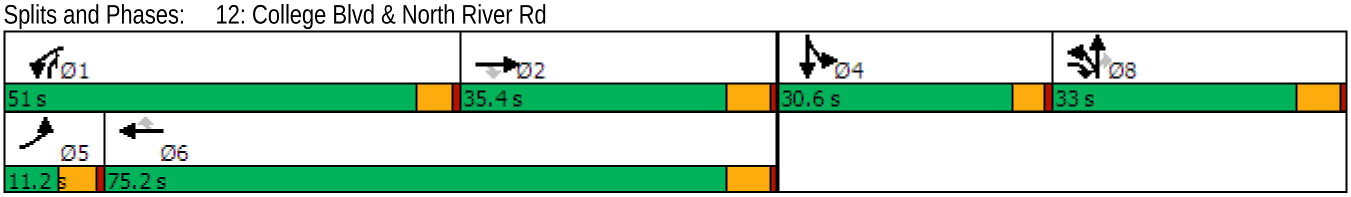
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	260	568	1340	625	80	20	1190	30	60
Future Volume (vph)	20	260	568	1340	625	80	20	1190	30	60
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.2	35.4	33.0	51.0	75.2	75.2	33.0	51.0	30.6	30.6
Total Split (%)	7.5%	23.6%	22.0%	34.0%	50.1%	50.1%	22.0%	34.0%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	16.4	45.5	46.6	61.9	61.9	27.6	80.2	11.9	11.9
Actuated g/C Ratio	0.05	0.13	0.37	0.38	0.51	0.51	0.23	0.66	0.10	0.10
v/c Ratio	0.25	0.59	0.82	1.11	0.38	0.10	0.98	0.61	0.19	0.42
Control Delay	68.9	55.6	23.9	95.6	21.0	4.2	87.1	5.8	54.4	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	55.6	23.9	95.6	21.0	4.2	87.1	5.8	54.4	56.3
LOS	E	E	C	F	C	A	F	A	D	E
Approach Delay		34.7			69.2		24.8			55.7
Approach LOS		C			E		C			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 121.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 47.3	Intersection LOS: D
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	260	568	1340	625	80	342	20	1190	30	60	10
Future Volume (veh/h)	20	260	568	1340	625	80	342	20	1190	30	60	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	283	617	1457	679	87	372	22	1293	33	65	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	799	684	1205	1964	876	348	21	1549	103	90	15
Arrive On Green	0.02	0.22	0.22	0.35	0.55	0.55	0.21	0.21	0.21	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1686	100	2790	1781	1559	264
Grp Volume(v), veh/h	22	283	617	1457	679	87	394	0	1293	33	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1786	0	1395	1781	0	1823
Q Serve(g_s), s	1.6	8.8	29.6	45.9	13.9	3.4	27.2	0.0	27.2	2.3	0.0	5.4
Cycle Q Clear(g_c), s	1.6	8.8	29.6	45.9	13.9	3.4	27.2	0.0	27.2	2.3	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	37	799	684	1205	1964	876	369	0	1549	103	0	106
V/C Ratio(X)	0.59	0.35	0.90	1.21	0.35	0.10	1.07	0.00	0.83	0.32	0.00	0.72
Avail Cap(c_a), veh/h	83	799	684	1205	1964	876	369	0	1549	352	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.9	43.0	29.7	42.9	16.3	13.9	52.2	0.0	24.3	59.5	0.0	60.9
Incr Delay (d2), s/veh	13.8	0.3	15.3	102.1	0.1	0.0	66.0	0.0	4.1	1.8	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.9	23.7	36.4	5.7	1.3	18.9	0.0	17.0	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	43.2	44.9	145.0	16.4	14.0	118.2	0.0	28.4	61.3	0.0	69.7
LnGrp LOS	E	D	D	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		922			2223			1687			109	
Approach Delay, s/veh		45.2			100.6			49.3			67.2	
Approach LOS		D			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	51.0	35.4		12.2	7.9	78.5		33.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	45.9	29.6		26.0	6.1	69.4		27.2				
Max Q Clear Time (g_c+I1), s	47.9	31.6		7.4	3.6	15.9		29.2				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	3.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			72.0									
HCM 6th LOS			E									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	30	30	1492	1858	90
Future Volume (vph)	60	30	30	1492	1858	90
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.6	6.3	56.9	50.6	50.6
Actuated g/C Ratio	0.16	0.24	0.09	0.81	0.72	0.72
v/c Ratio	0.23	0.09	0.11	0.57	0.80	0.09
Control Delay	27.6	17.2	34.6	7.3	18.6	6.9
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.6	17.2	34.6	7.4	18.6	6.9
LOS	C	B	C	A	B	A
Approach Delay	24.1			7.9	18.1	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 70.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 13.9 — Intersection LOS: B
Intersection Capacity Utilization 66.7% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	30	30	1492	1858	90
Future Volume (veh/h)	60	30	30	1492	1858	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	33	33	1622	2020	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	184	230	144	2609	2177	971
Arrive On Green	0.10	0.10	0.04	0.73	0.61	0.61
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	65	33	33	1622	2020	98
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	2.2	1.2	0.6	14.3	32.6	1.6
Cycle Q Clear(g_c), s	2.2	1.2	0.6	14.3	32.6	1.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	184	230	144	2609	2177	971
V/C Ratio(X)	0.35	0.14	0.23	0.62	0.93	0.10
Avail Cap(c_a), veh/h	781	760	346	2870	2230	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	23.9	29.6	4.2	11.1	5.1
Incr Delay (d2), s/veh	1.2	0.3	0.8	0.4	7.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	2.9	11.6	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.8	24.1	30.4	4.5	18.5	5.2
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	98			1655	2118	
Approach Delay, s/veh	26.6			5.0	17.9	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.7		11.2	7.8	44.9
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		16.3		4.2	2.6	34.6
Green Ext Time (p_c), s		12.0		0.3	0.0	4.5

Intersection Summary		
HCM 6th Ctrl Delay		12.6
HCM 6th LOS		B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	199	10	90	20	50	20	1263	20	1640	238
Future Volume (vph)	199	10	90	20	50	20	1263	20	1640	238
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	62.6	10.7	63.2	63.2
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	9.2%	56.9%	9.7%	57.5%	57.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	21.5	21.5		21.5	21.5	5.2	52.7	5.8	52.9	52.9
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.06	0.59	0.07	0.60	0.60
v/c Ratio	0.72	0.28		0.41	0.12	0.21	0.47	0.19	0.85	0.27
Control Delay	46.6	12.0		34.9	3.7	52.6	12.3	51.0	21.9	8.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	46.6	12.0		34.9	3.7	52.6	12.3	51.0	22.5	8.3
LOS	D	B		C	A	D	B	D	C	A
Approach Delay		33.5		25.2			12.9		21.0	
Approach LOS		C		C			B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 88.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	10	110	90	20	50	20	1263	40	20	1640	238
Future Volume (veh/h)	199	10	110	90	20	50	20	1263	40	20	1640	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	11	120	98	22	54	22	1373	43	22	1783	259
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	41	442	322	66	477	40	2697	84	40	1884	840
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.02	0.53	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1323	135	1471	868	221	1585	1781	5086	159	1781	3554	1585
Grp Volume(v), veh/h	216	0	131	120	0	54	22	919	497	22	1783	259
Grp Sat Flow(s),veh/h/ln	1323	0	1606	1089	0	1585	1781	1702	1842	1781	1777	1585
Q Serve(g_s), s	17.2	0.0	6.6	7.3	0.0	2.6	1.3	18.5	18.5	1.3	50.3	9.8
Cycle Q Clear(g_c), s	31.1	0.0	6.6	13.9	0.0	2.6	1.3	18.5	18.5	1.3	50.3	9.8
Prop In Lane	1.00		0.92	0.82		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	293	0	483	389	0	477	40	1805	976	40	1884	840
V/C Ratio(X)	0.74	0.00	0.27	0.31	0.00	0.11	0.55	0.51	0.51	0.55	0.95	0.31
Avail Cap(c_a), veh/h	293	0	483	389	0	477	84	1817	983	94	1917	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	28.3	33.0	0.0	26.9	51.5	16.1	16.1	51.5	23.6	14.0
Incr Delay (d2), s/veh	9.4	0.0	0.3	0.4	0.0	0.1	11.2	0.2	0.4	11.2	10.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	2.6	2.6	0.0	1.0	0.7	7.0	7.6	0.7	22.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	0.0	28.6	33.4	0.0	27.0	62.7	16.3	16.5	62.7	34.0	14.2
LnGrp LOS	D	A	C	C	A	C	E	B	B	E	C	B
Approach Vol, veh/h		347			174			1438			2064	
Approach Delay, s/veh		43.9			31.4			17.1			31.9	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	62.2		36.7	7.5	62.2		36.7
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7
Max Green Setting (Gmax), s	5.6	56.8		* 32	5.0	57.4		* 32
Max Q Clear Time (g_c+I1), s	3.3	20.5		33.1	3.3	52.3		15.9
Green Ext Time (p_c), s	0.0	8.3		0.0	0.0	4.1		0.6

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

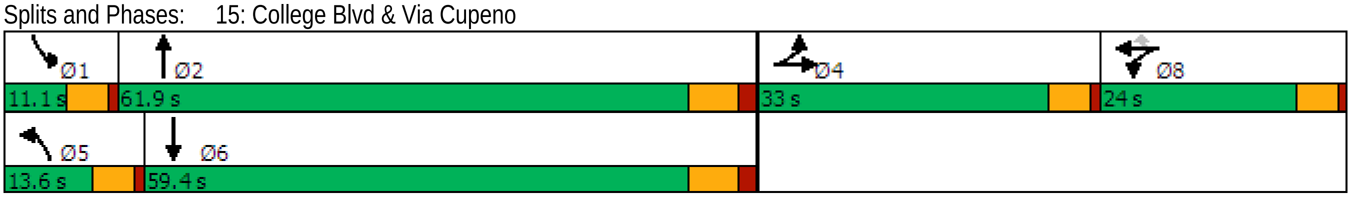
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	5	10	5	170	1264	5	1757
Future Volume (vph)	5	10	5	170	1264	5	1757
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	13.6	61.9	11.1	59.4
Total Split (%)	25.4%	18.5%	18.5%	10.5%	47.6%	8.5%	45.7%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.6	15.8	15.8	8.6	63.0	6.1	51.1
Actuated g/C Ratio	0.11	0.14	0.14	0.08	0.58	0.06	0.47
v/c Ratio	0.31	0.72	0.02	0.69	0.49	0.05	0.84
Control Delay	28.3	62.4	0.0	64.9	16.4	56.0	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	62.4	0.0	64.9	16.4	56.0	30.4
LOS	C	E	A	E	B	E	C
Approach Delay	28.3	60.8			22.0		30.4
Approach LOS	C	E			C		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 109.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	5	50	160	10	5	170	1264	40	5	1757	64
Future Volume (veh/h)	58	5	50	160	10	5	170	1264	40	5	1757	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	5	54	174	11	5	185	1374	43	5	1910	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	12	128	213	13	201	260	2734	86	14	2377	87
Arrive On Green	0.08	0.08	0.08	0.13	0.13	0.13	0.08	0.54	0.54	0.01	0.47	0.47
Sat Flow, veh/h	1736	139	1507	1680	106	1585	3456	5087	159	1781	5056	185
Grp Volume(v), veh/h	65	0	57	185	0	5	185	920	497	5	1285	695
Grp Sat Flow(s),veh/h/ln	1784	0	1599	1786	0	1585	1728	1702	1842	1781	1702	1837
Q Serve(g_s), s	3.1	0.0	3.1	9.1	0.0	0.2	4.7	15.4	15.4	0.3	28.9	29.0
Cycle Q Clear(g_c), s	3.1	0.0	3.1	9.1	0.0	0.2	4.7	15.4	15.4	0.3	28.9	29.0
Prop In Lane	0.97		0.94	0.94		1.00	1.00		0.09	1.00		0.10
Lane Grp Cap(c), veh/h	151	0	135	226	0	201	260	1830	990	14	1601	864
V/C Ratio(X)	0.43	0.00	0.42	0.82	0.00	0.02	0.71	0.50	0.50	0.36	0.80	0.80
Avail Cap(c_a), veh/h	555	0	498	377	0	335	326	2084	1128	119	1990	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	39.1	38.3	0.0	34.4	40.7	13.2	13.2	44.4	20.3	20.3
Incr Delay (d2), s/veh	1.9	0.0	2.1	7.1	0.0	0.0	5.3	0.2	0.4	14.8	2.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.3	4.4	0.0	0.1	2.2	5.5	6.0	0.2	11.1	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	41.2	45.4	0.0	34.5	45.9	13.4	13.6	59.2	22.3	24.0
LnGrp LOS	D	A	D	D	A	C	D	B	B	E	C	C
Approach Vol, veh/h		122			190			1602			1985	
Approach Delay, s/veh		41.1			45.1			17.2			23.0	
Approach LOS		D			D			B			C	

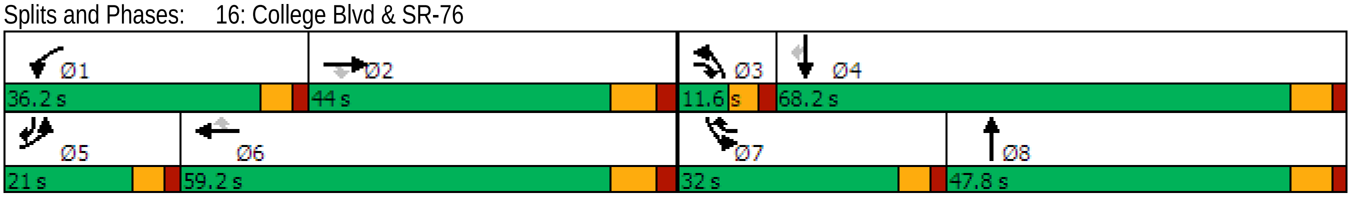
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	55.2		12.6	11.9	49.1		16.4				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	55.1		28.0	8.5	52.6		19.0				
Max Q Clear Time (g_c+I1), s	2.3	17.4		5.1	6.7	31.0		11.1				
Green Ext Time (p_c), s	0.0	8.4		0.4	0.1	11.3		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			22.3
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	369	950	40	660	1640	555	60	549	632	887	438
Future Volume (vph)	369	950	40	660	1640	555	60	549	632	887	438
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	36.0	49.9	30.5	51.2	85.5	5.9	41.0	26.3	61.4	83.5
Actuated g/C Ratio	0.10	0.22	0.31	0.19	0.32	0.53	0.04	0.26	0.16	0.38	0.52
v/c Ratio	1.22	0.90	0.07	1.10	1.10	0.69	0.52	1.04	1.22	0.71	0.54
Control Delay	181.4	71.8	0.2	122.6	103.2	29.1	90.3	92.9	167.2	45.3	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	181.4	71.8	0.2	122.6	103.2	29.1	90.3	92.9	167.2	45.3	21.5
LOS	F	E	A	F	F	C	F	F	F	D	C
Approach Delay		99.5			93.3			92.8		79.3	
Approach LOS		F			F			F		E	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 90.6	Intersection LOS: F
Intersection Capacity Utilization 107.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	950	40	660	1640	555	60	549	320	632	887	438
Future Volume (veh/h)	369	950	40	660	1640	555	60	549	320	632	887	438
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	1033	43	717	1783	603	65	597	348	687	964	476
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1149	403	659	1634	768	102	554	323	568	1390	772
Arrive On Green	0.10	0.22	0.22	0.19	0.32	0.32	0.03	0.26	0.26	0.16	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2161	1260	3456	3554	1585
Grp Volume(v), veh/h	401	1033	43	717	1783	603	65	491	454	687	964	476
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1644	1728	1777	1585
Q Serve(g_s), s	15.3	31.4	3.3	30.5	51.2	50.7	3.0	41.0	41.0	26.3	36.3	35.2
Cycle Q Clear(g_c), s	15.3	31.4	3.3	30.5	51.2	50.7	3.0	41.0	41.0	26.3	36.3	35.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.77	1.00		1.00
Lane Grp Cap(c), veh/h	330	1149	403	659	1634	768	102	455	421	568	1390	772
V/C Ratio(X)	1.21	0.90	0.11	1.09	1.09	0.79	0.64	1.08	1.08	1.21	0.69	0.62
Avail Cap(c_a), veh/h	330	1149	403	659	1634	768	127	455	421	568	1390	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	60.2	45.7	64.8	54.4	34.3	76.8	59.5	59.5	66.9	40.7	30.1
Incr Delay (d2), s/veh	120.7	9.7	0.1	61.5	51.5	5.4	6.9	64.8	66.4	109.9	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	14.7	1.3	19.1	29.7	20.6	1.4	26.7	24.9	20.3	16.3	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.1	69.9	45.8	126.3	105.9	39.7	83.8	124.3	125.9	176.8	42.2	31.6
LnGrp LOS	F	E	D	F	F	D	F	F	F	F	D	C
Approach Vol, veh/h		1477			3103			1010			2127	
Approach Delay, s/veh		102.7			97.8			122.4			83.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.2	44.0	10.4	69.4	21.0	59.2	32.0	47.8
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	32.5	33.4	5.0	38.3	17.3	53.2	28.3	43.0
Green Ext Time (p_c), s	0.0	1.4	0.0	8.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	97.9
HCM 6th LOS	F

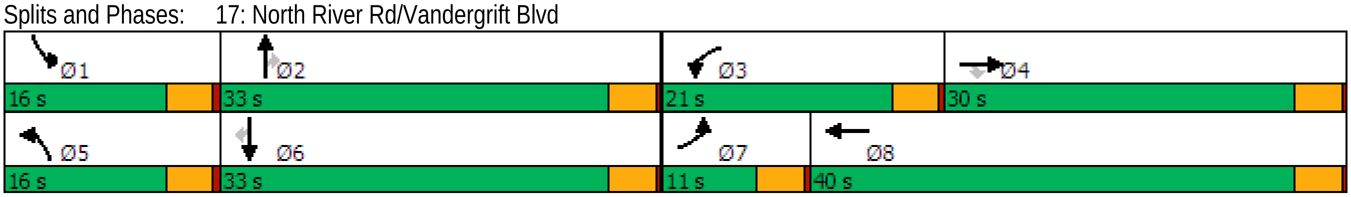
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	60	70	140	827	60	140	990	370	130	868	50
Future Volume (vph)	60	70	140	827	60	140	990	370	130	868	50
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.8	11.1	11.1	17.2	23.6	11.1	29.5	29.5	10.8	29.3	29.3
Actuated g/C Ratio	0.08	0.13	0.13	0.20	0.28	0.13	0.35	0.35	0.13	0.35	0.35
v/c Ratio	0.46	0.31	0.45	1.30	0.63	0.66	0.61	0.49	0.63	0.77	0.08
Control Delay	51.0	35.9	9.9	174.0	12.1	51.4	25.8	5.1	49.7	31.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	35.9	9.9	174.0	12.1	51.4	25.8	5.1	49.7	31.4	0.3
LOS	D	D	A	F	B	D	C	A	D	C	A
Approach Delay		25.7			122.1		23.0			32.2	
Approach LOS		C			F		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 84.7	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 55.5	Intersection LOS: E
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	70	140	827	60	330	140	990	370	130	868	50
Future Volume (veh/h)	60	70	140	827	60	330	140	990	370	130	868	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	76	152	899	65	359	152	1076	402	141	943	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	265	224	713	75	414	188	1832	569	176	1251	558
Arrive On Green	0.05	0.14	0.14	0.21	0.30	0.30	0.11	0.36	0.36	0.10	0.35	0.35
Sat Flow, veh/h	1781	1870	1585	3456	249	1374	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	65	76	152	899	0	424	152	1076	402	141	943	54
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1623	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.0	3.0	7.5	17.0	0.0	20.4	6.9	14.1	17.9	6.4	19.3	1.9
Cycle Q Clear(g_c), s	3.0	3.0	7.5	17.0	0.0	20.4	6.9	14.1	17.9	6.4	19.3	1.9
Prop In Lane	1.00		1.00	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	84	265	224	713	0	488	188	1832	569	176	1251	558
V/C Ratio(X)	0.78	0.29	0.68	1.26	0.00	0.87	0.81	0.59	0.71	0.80	0.75	0.10
Avail Cap(c_a), veh/h	151	591	500	713	0	710	260	1832	569	260	1251	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	31.6	33.6	32.7	0.0	27.2	36.0	21.4	22.7	36.3	23.5	17.9
Incr Delay (d2), s/veh	14.2	0.6	3.6	128.3	0.0	7.9	12.3	1.4	7.2	10.4	4.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	3.0	19.6	0.0	8.6	3.6	5.6	7.5	3.2	8.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	32.2	37.1	160.9	0.0	35.1	48.3	22.8	29.9	46.7	27.8	18.2
LnGrp LOS	D	C	D	F	A	D	D	C	C	D	C	B
Approach Vol, veh/h		293			1323			1630			1138	
Approach Delay, s/veh		39.4			120.6			27.0			29.7	
Approach LOS		D			F			C			C	

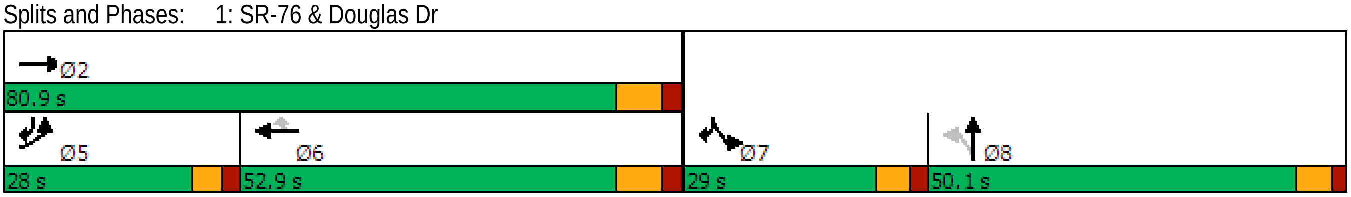
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	33.6	21.0	15.7	12.7	33.0	7.9	28.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	8.4	19.9	19.0	9.5	8.9	21.3	5.0	22.4
Green Ext Time (p_c), s	0.1	5.6	0.0	0.8	0.1	3.9	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	607	2040	1340	298	329	434	
Future Volume (vph)	607	2040	1340	298	329	434	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	80.9	52.9	52.9	29.0		50.1
Total Split (%)	17.5%	50.6%	33.1%	33.1%	18.1%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	72.9	44.9	44.9	22.9	51.3	
Actuated g/C Ratio	0.20	0.66	0.41	0.41	0.21	0.47	
v/c Ratio	0.95	0.94	1.01	0.39	0.97	0.31	
Control Delay	67.4	26.9	58.7	3.8	84.7	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	67.4	26.9	58.7	3.8	84.7	2.4	
LOS	E	C	E	A	F	A	
Approach Delay		36.2	48.7				
Approach LOS		D	D				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 40.5	Intersection LOS: D
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	607	2040	0	0	1340	298	0	0	0	329	0	434
Future Volume (veh/h)	607	2040	0	0	1340	298	0	0	0	329	0	434
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	660	2217	0	0	1457	324	0	0	0	358	0	472
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	701	2357	0	0	1452	648	0	2	0	371	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.21	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	358	
Grp Volume(v), veh/h	660	2217	0	0	1457	324	0	0	0	358	80.4	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	20.7	61.4	0.0	0.0	44.9	16.7	0.0	0.0	0.0	21.9		
Cycle Q Clear(g_c), s	20.7	61.4	0.0	0.0	44.9	16.7	0.0	0.0	0.0	21.9		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	701	2357	0	0	1452	648	0	2	0	371		
V/C Ratio(X)	0.94	0.94	0.00	0.00	1.00	0.50	0.00	0.00	0.00	0.96		
Avail Cap(c_a), veh/h	701	2357	0	0	1452	648	0	749	0	371		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	43.2	16.6	0.0	0.0	32.5	24.2	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	20.9	8.3	0.0	0.0	24.5	0.6	0.0	0.0	0.0	37.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.8	24.5	0.0	0.0	23.5	6.3	0.0	0.0	0.0	13.4		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	24.9	0.0	0.0	57.0	24.8	0.0	0.0	0.0	80.4		
LnGrp LOS	E	C	A	A	F	C	A	A	A	F		
Approach Vol, veh/h		2877			1781			0				
Approach Delay, s/veh		33.9			51.1			0.0				
Approach LOS		C			D							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		80.9			28.0	52.9	29.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		72.9			* 22	44.9	22.9	44.0				
Max Q Clear Time (g_c+I1), s		63.4			22.7	46.9	23.9	0.0				
Green Ext Time (p_c), s		7.7			0.0	0.0	0.0	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			43.3
HCM 6th LOS			D

Notes

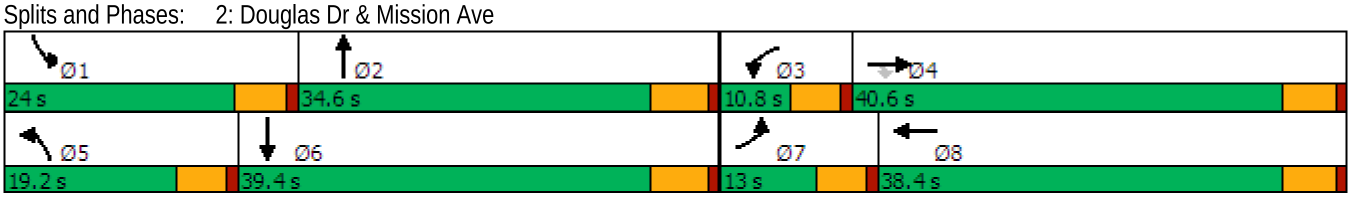
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	266	740	170	70	410	190	684	340	573
Future Volume (vph)	266	740	170	70	410	190	684	340	573
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.0	40.6	40.6	10.8	38.4	19.2	34.6	24.0	39.4
Total Split (%)	11.8%	36.9%	36.9%	9.8%	34.9%	17.5%	31.5%	21.8%	35.8%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.0	29.7	29.7	5.7	27.4	14.0	26.2	19.1	31.2
Actuated g/C Ratio	0.08	0.29	0.29	0.06	0.27	0.14	0.26	0.19	0.31
v/c Ratio	1.08	0.78	0.33	0.77	0.85	0.86	0.86	1.12	0.64
Control Delay	124.8	39.5	10.2	94.7	34.5	76.1	47.3	127.3	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.8	39.5	10.2	94.7	34.5	76.1	47.3	127.3	33.9
LOS	F	D	B	F	C	E	D	F	C
Approach Delay		54.5			39.2		53.4		66.6
Approach LOS		D			D		D		E

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 102.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 53.8 Intersection LOS: D
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	740	170	70	410	408	190	684	30	340	573	58
Future Volume (veh/h)	266	740	170	70	410	408	190	684	30	340	573	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	289	804	185	76	446	443	207	743	33	370	623	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1143	510	96	534	477	237	836	37	320	938	95
Arrive On Green	0.08	0.32	0.32	0.05	0.30	0.30	0.13	0.24	0.24	0.18	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3466	154	1781	3259	329
Grp Volume(v), veh/h	289	804	185	76	446	443	207	381	395	370	339	347
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1843	1781	1777	1811
Q Serve(g_s), s	7.9	20.9	9.4	4.4	24.7	28.5	12.0	21.8	21.8	18.9	17.7	17.7
Cycle Q Clear(g_c), s	7.9	20.9	9.4	4.4	24.7	28.5	12.0	21.8	21.8	18.9	17.7	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	259	1143	510	96	534	477	237	429	445	320	511	521
V/C Ratio(X)	1.11	0.70	0.36	0.79	0.83	0.93	0.87	0.89	0.89	1.16	0.66	0.67
Avail Cap(c_a), veh/h	259	1189	530	96	557	497	239	486	504	320	567	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	31.3	27.4	49.2	34.4	35.7	44.7	38.5	38.6	43.2	33.0	33.0
Incr Delay (d2), s/veh	90.0	1.8	0.4	34.1	10.3	23.7	27.8	16.5	16.1	99.8	2.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	9.1	3.6	2.9	12.0	13.9	7.1	11.3	11.7	17.1	7.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.7	33.1	27.9	83.2	44.6	59.4	72.6	55.1	54.7	143.0	35.5	35.5
LnGrp LOS	F	C	C	F	D	E	E	E	D	F	D	D
Approach Vol, veh/h		1278			965			983			1056	
Approach Delay, s/veh		56.2			54.5			58.6			73.2	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	31.2	10.8	39.2	19.1	36.1	13.0	37.0
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	18.9	28.8	5.7	35.2	14.1	33.6	7.9	33.0
Max Q Clear Time (g_c+I1), s	20.9	23.8	6.4	22.9	14.0	19.7	9.9	30.5
Green Ext Time (p_c), s	0.0	1.6	0.0	4.0	0.0	2.5	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

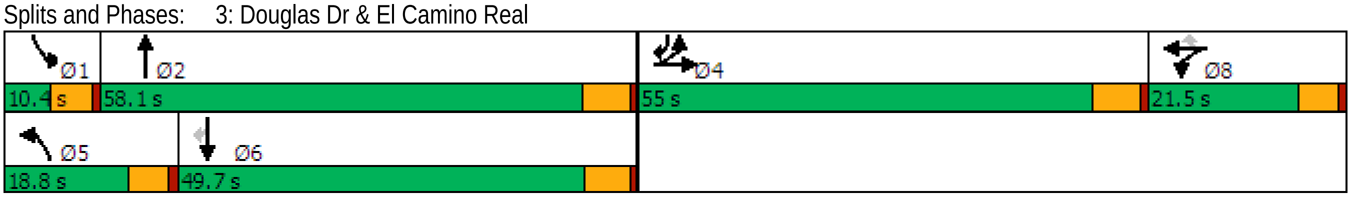
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1115	70	80	30	10	100	1127	10	812	701
Future Volume (vph)	1115	70	80	30	10	100	1127	10	812	701
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	55.0	55.0		21.5	21.5	18.8	58.1	10.4	49.7	55.0
Total Split (%)	37.9%	37.9%		14.8%	14.8%	13.0%	40.1%	7.2%	34.3%	37.9%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	49.0	49.0	136.9	12.4	12.4	12.0	53.7	5.0	40.3	95.3
Actuated g/C Ratio	0.36	0.36	1.00	0.09	0.09	0.09	0.39	0.04	0.29	0.70
v/c Ratio	0.99	0.11	0.05	0.60	0.04	0.70	0.94	0.17	0.85	0.39
Control Delay	66.8	32.0	0.1	76.5	0.3	85.4	54.6	73.2	54.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	32.0	0.1	76.5	0.3	85.4	54.6	73.2	54.6	9.8
LOS	E	C	A	E	A	F	D	E	D	A
Approach Delay		60.6		68.8			57.0		34.1	
Approach LOS		E		E			E		C	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 136.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 50.1	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1115	70	80	60	30	10	100	1127	70	10	812	701
Future Volume (veh/h)	1115	70	80	60	30	10	100	1127	70	10	812	701
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1212	76	0	65	33	11	109	1225	76	11	883	762
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1265	685		82	42	108	133	1279	79	22	1116	1897
Arrive On Green	0.37	0.37	0.00	0.07	0.07	0.07	0.07	0.63	0.38	0.01	0.31	0.31
Sat Flow, veh/h	3456	1870	1585	1201	610	1585	1781	3399	211	1781	3554	2790
Grp Volume(v), veh/h	1212	76	0	98	0	11	109	640	661	11	883	762
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1832	1781	1777	1395
Q Serve(g_s), s	45.2	3.5	0.0	7.0	0.0	0.9	8.0	44.2	44.8	0.8	29.9	15.9
Cycle Q Clear(g_c), s	45.2	3.5	0.0	7.0	0.0	0.9	8.0	44.2	44.8	0.8	29.9	15.9
Prop In Lane	1.00		1.00	0.66		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	1265	685		124	0	108	133	669	690	22	1116	1897
V/C Ratio(X)	0.96	0.11		0.79	0.00	0.10	0.82	0.96	0.96	0.49	0.79	0.40
Avail Cap(c_a), veh/h	1279	692		220	0	192	181	699	721	68	1178	1946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	27.6	0.0	60.5	0.0	57.6	60.1	23.5	25.4	64.7	41.3	9.3
Incr Delay (d2), s/veh	16.1	0.1	0.0	10.7	0.0	0.4	18.7	23.4	23.4	15.7	3.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.8	1.6	0.0	3.6	0.0	0.4	4.3	18.4	20.2	0.5	13.6	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	27.7	0.0	71.1	0.0	58.0	78.8	46.9	48.9	80.4	44.8	9.4
LnGrp LOS	E	C		E	A	E	E	D	D	F	D	A
Approach Vol, veh/h		1288	A		109			1410			1656	
Approach Delay, s/veh		55.2			69.8			50.3			28.8	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	55.8		54.5	15.3	47.6		14.5				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	51.9		48.8	13.4	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.8	46.8		47.2	10.0	31.9		9.0				
Green Ext Time (p_c), s	0.0	2.8		1.1	0.1	6.7		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			44.2
HCM 6th LOS			D

Notes

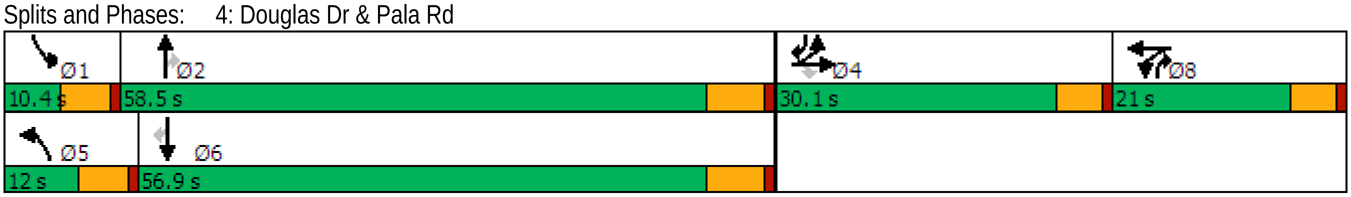
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	88	5	110	20	5	110	2023	30	20	1383	110
Future Volume (vph)	88	5	110	20	5	110	2023	30	20	1383	110
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	12.0	58.5	21.0	10.4	56.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.0%	48.8%	17.5%	8.7%	47.4%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	10.6	10.6	10.6	7.0	7.0	6.7	58.1	66.6	5.1	49.5	66.4
Actuated g/C Ratio	0.11	0.11	0.11	0.08	0.08	0.07	0.62	0.71	0.05	0.53	0.71
v/c Ratio	0.27	0.26	0.41	0.17	0.25	0.94	1.00	0.03	0.23	0.80	0.10
Control Delay	42.3	42.1	11.0	47.8	22.8	113.4	39.9	0.3	53.2	23.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	42.1	11.0	47.8	22.8	113.4	39.9	0.3	53.2	23.9	1.1
LOS	D	D	B	D	C	F	D	A	D	C	A
Approach Delay		25.2			31.9		43.1			22.6	
Approach LOS		C			C		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.2	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	5	110	20	5	30	110	2023	30	20	1383	110
Future Volume (veh/h)	88	5	110	20	5	30	110	2023	30	20	1383	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	0	120	22	5	33	120	2199	33	22	1503	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	0	165	92	11	73	130	2059	1000	42	1882	1005
Arrive On Green	0.10	0.00	0.10	0.05	0.05	0.05	0.07	0.97	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	100	0	120	22	0	38	120	2199	33	22	1503	120
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.3	0.0	6.6	1.1	0.0	2.1	6.0	52.3	0.7	1.1	31.1	2.7
Cycle Q Clear(g_c), s	2.3	0.0	6.6	1.1	0.0	2.1	6.0	52.3	0.7	1.1	31.1	2.7
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	0	165	92	0	84	130	2059	1000	42	1882	1005
V/C Ratio(X)	0.27	0.00	0.73	0.24	0.00	0.45	0.92	1.07	0.03	0.53	0.80	0.12
Avail Cap(c_a), veh/h	986	0	439	314	0	285	130	2059	1000	99	1996	1055
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	0.0	39.2	41.1	0.0	41.6	41.6	1.5	6.3	43.6	17.3	6.6
Incr Delay (d2), s/veh	0.4	0.0	6.0	1.3	0.0	3.8	55.4	41.0	0.0	9.9	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.8	0.5	0.0	0.9	4.6	12.4	0.3	0.6	12.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	45.2	42.4	0.0	45.4	97.0	42.4	6.3	53.4	19.6	6.6
LnGrp LOS	D	A	D	D	A	D	F	F	A	D	B	A
Approach Vol, veh/h		220			60			2352			1645	
Approach Delay, s/veh		41.8			44.3			44.7			19.1	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	58.5		14.5	12.0	54.0		9.8
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.0	52.3		25.0	6.6	50.7		15.9
Max Q Clear Time (g_c+I1), s	3.1	54.3		8.6	8.0	33.1		4.1
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	8.6		0.1

Intersection Summary			
HCM 6th Ctrl Delay			34.7
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	10	5	80	50	5	5	1920	90	5	1313	80
Future Volume (vph)	10	5	80	50	5	5	1920	90	5	1313	80
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	83.0	83.0	10.4	93.4	93.4
Total Split (%)	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	63.8%	63.8%	8.0%	71.8%	71.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.2	12.2		12.2	12.2	76.0	76.0	5.2	77.6	77.6
Actuated g/C Ratio		0.13	0.13		0.13	0.13	0.78	0.78	0.05	0.80	0.80
v/c Ratio		0.08	0.33		0.34	0.02	0.75	0.08	0.05	0.50	0.07
Control Delay		38.9	15.1		45.2	0.2	12.7	3.5	53.6	6.3	3.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.9	15.1		45.2	0.2	12.7	3.5	53.6	6.3	3.4
LOS		D	B		D	A	B	A	D	A	A
Approach Delay		18.7			41.7		12.2			6.3	
Approach LOS		B			D		B			A	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 96.9
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 76.3% ICU Level of Service D
Analysis Period (min) 15

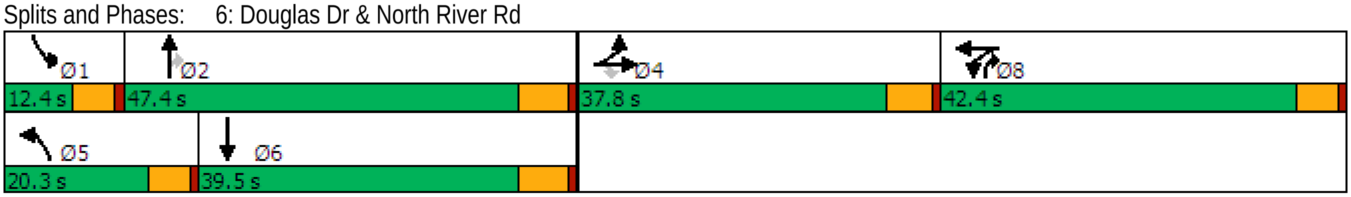
Splits and Phases: 5: Douglas Dr & Rainer Way

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	80	50	5	5	0	1920	90	5	1313	80
Future Volume (veh/h)	10	5	80	50	5	5	0	1920	90	5	1313	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	87	54	5	5	0	2087	98	5	1427	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	58	18	395	73	4	395	0	2162	964	11	2340	1044
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.61	0.61	0.01	0.66	0.66
Sat Flow, veh/h	33	71	1585	65	17	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	16	0	87	59	0	5	0	2087	98	5	1427	87
Grp Sat Flow(s),veh/h/ln	103	0	1585	82	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.3	0.0	5.3	1.6	0.0	0.3	0.0	68.3	3.2	0.3	28.1	2.4
Cycle Q Clear(g_c), s	29.9	0.0	5.3	30.5	0.0	0.3	0.0	68.3	3.2	0.3	28.1	2.4
Prop In Lane	0.69		1.00	0.92		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	0	395	77	0	395	0	2162	964	11	2340	1044
V/C Ratio(X)	0.21	0.00	0.22	0.77	0.00	0.01	0.00	0.97	0.10	0.45	0.61	0.08
Avail Cap(c_a), veh/h	94	0	414	93	0	414	0	2214	987	73	2516	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	36.5	59.5	0.0	34.6	0.0	22.8	10.0	60.6	11.9	7.6
Incr Delay (d2), s/veh	1.4	0.0	0.3	26.4	0.0	0.0	0.0	12.0	0.0	25.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	2.4	0.0	0.1	0.0	30.0	1.1	0.2	10.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	36.8	85.9	0.0	34.6	0.0	34.7	10.1	86.5	12.3	7.6
LnGrp LOS	D	A	D	F	A	C	A	C	B	F	B	A
Approach Vol, veh/h		103			64			2185			1519	
Approach Delay, s/veh		37.2			81.9			33.6			12.3	
Approach LOS		D			F			C			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	81.6		35.9		87.8		35.9				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	76.3		32.0		86.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	70.3		31.9		30.1		32.5				
Green Ext Time (p_c), s	0.0	5.0		0.0		11.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			26.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	108	80	603	69	170	770	880	40	660
Future Volume (vph)	40	108	80	603	69	170	770	880	40	660
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.3	47.4	42.4	12.4	39.5
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.5%	33.9%	30.3%	8.9%	28.2%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.5	13.5	13.5	34.7	34.7	15.1	43.2	80.0	6.7	32.2
Actuated g/C Ratio	0.11	0.11	0.11	0.29	0.29	0.13	0.36	0.67	0.06	0.27
v/c Ratio	0.21	0.29	0.28	0.70	0.48	0.82	0.65	0.44	0.43	0.81
Control Delay	50.2	50.0	2.2	47.5	36.8	80.4	36.9	1.2	71.8	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	50.0	2.2	47.5	36.8	80.4	36.9	1.2	71.8	48.7
LOS	D	D	A	D	D	F	D	A	E	D
Approach Delay		33.2			41.3		23.7			49.9
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 118.6	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 33.5	Intersection LOS: C
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	108	80	603	69	50	170	770	880	40	660	50
Future Volume (veh/h)	40	108	80	603	69	50	170	770	880	40	660	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	117	87	655	75	54	185	837	957	43	717	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	320	143	882	250	180	220	1373	1768	64	1000	75
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.12	0.39	0.39	0.04	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	3563	1011	728	1781	3554	2790	1781	3350	252
Grp Volume(v), veh/h	43	117	87	655	0	129	185	837	957	43	380	391
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1739	1781	1777	1395	1781	1777	1825
Q Serve(g_s), s	2.1	2.9	5.0	16.1	0.0	5.7	9.6	17.9	18.1	2.3	18.1	18.1
Cycle Q Clear(g_c), s	2.1	2.9	5.0	16.1	0.0	5.7	9.6	17.9	18.1	2.3	18.1	18.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	160	320	143	882	0	431	220	1373	1768	64	530	545
V/C Ratio(X)	0.27	0.37	0.61	0.74	0.00	0.30	0.84	0.61	0.54	0.68	0.72	0.72
Avail Cap(c_a), veh/h	601	1199	535	1389	0	678	280	1543	1902	131	624	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	40.6	41.6	32.9	0.0	29.0	40.6	23.4	9.7	45.2	29.7	29.7
Incr Delay (d2), s/veh	1.3	1.0	5.9	1.8	0.0	0.5	16.3	1.0	0.6	11.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.3	2.2	7.0	0.0	2.4	5.2	7.5	9.8	1.2	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	41.6	47.4	34.7	0.0	29.6	57.0	24.4	10.2	57.0	34.5	34.4
LnGrp LOS	D	D	D	C	A	C	E	C	B	E	C	C
Approach Vol, veh/h		247			784			1979			814	
Approach Delay, s/veh		43.6			33.9			20.6			35.7	
Approach LOS		D			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	42.9		14.3	17.1	34.5		28.9				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	7.0	41.2		32.0	14.9	33.3		37.0				
Max Q Clear Time (g_c+I1), s	4.3	20.1		7.0	11.6	20.1		18.1				
Green Ext Time (p_c), s	0.0	16.5		1.5	0.2	5.4		5.4				

Intersection Summary			
HCM 6th Ctrl Delay			28.0
HCM 6th LOS			C

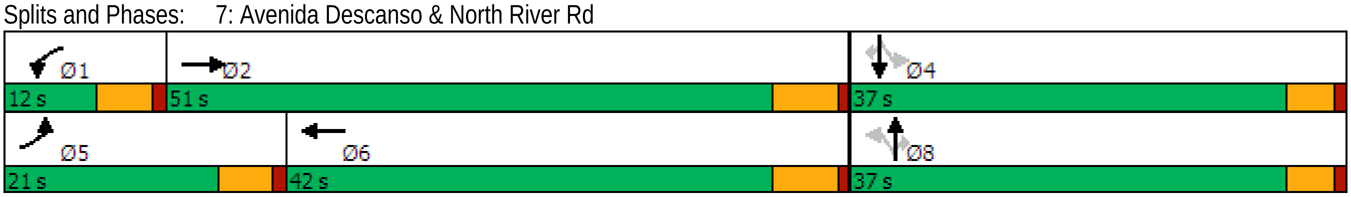
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	140	968	30	702	5	5	40	100	5	90
Future Volume (vph)	140	968	30	702	5	5	40	100	5	90
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	51.0	12.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	51.0%	12.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	11.3	35.9	6.8	22.9		13.1	13.1		13.1	13.1
Actuated g/C Ratio	0.18	0.56	0.11	0.36		0.20	0.20		0.20	0.20
v/c Ratio	0.49	0.54	0.18	0.71		0.03	0.10		0.41	0.22
Control Delay	33.9	12.7	36.4	21.9		22.8	0.5		28.6	2.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	33.9	12.7	36.4	21.9		22.8	0.5		28.6	2.9
LOS	C	B	D	C		C	A		C	A
Approach Delay		15.4		22.4		4.7			16.7	
Approach LOS		B		C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 64.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	968	10	30	702	110	5	5	40	100	5	90
Future Volume (veh/h)	140	968	10	30	702	110	5	5	40	100	5	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1052	11	33	763	120	5	5	43	109	5	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1348	14	57	920	145	68	47	636	91	2	636
Arrive On Green	0.11	0.37	0.37	0.03	0.30	0.30	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1781	3603	38	1781	3076	484	2	118	1585	9	6	1585
Grp Volume(v), veh/h	152	519	544	33	441	442	10	0	43	114	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1783	120	0	1585	15	0	1585
Q Serve(g_s), s	6.7	20.8	20.8	1.5	18.6	18.6	0.1	0.0	1.3	0.2	0.0	3.2
Cycle Q Clear(g_c), s	6.7	20.8	20.8	1.5	18.6	18.6	32.4	0.0	1.3	32.4	0.0	3.2
Prop In Lane	1.00		0.02	1.00		0.27	0.50		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	191	665	697	57	531	533	115	0	636	93	0	636
V/C Ratio(X)	0.80	0.78	0.78	0.57	0.83	0.83	0.09	0.00	0.07	1.22	0.00	0.15
Avail Cap(c_a), veh/h	351	996	1045	152	798	801	116	0	637	94	0	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	22.3	22.3	38.5	26.3	26.3	20.2	0.0	14.8	39.6	0.0	15.4
Incr Delay (d2), s/veh	7.3	2.3	2.2	8.7	4.6	4.6	0.3	0.0	0.0	164.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	8.6	9.0	0.8	8.2	8.2	0.1	0.0	0.5	6.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	24.7	24.6	47.2	31.0	31.0	20.6	0.0	14.9	204.4	0.0	15.5
LnGrp LOS	D	C	C	D	C	C	C	A	B	F	A	B
Approach Vol, veh/h		1215			916			53			212	
Approach Delay, s/veh		26.8			31.6			16.0			117.1	
Approach LOS		C			C			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	36.0		37.0	13.8	30.0		37.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	6.9	45.2		32.4	15.9	36.2		32.4				
Max Q Clear Time (g_c+I1), s	3.5	22.8		34.4	8.7	20.6		34.4				
Green Ext Time (p_c), s	0.0	4.9		0.0	0.3	3.6		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			36.4
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	1098	812	20	5	20
Future Vol, veh/h	30	1098	812	20	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	1193	883	22	5	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	905	0	-	0	1557	453
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	663	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	747	-	-	-	103	554
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	474	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	747	-	-	-	98	554
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	474	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	747	-	-	-	287
HCM Lane V/C Ratio	0.044	-	-	-	0.095
HCM Control Delay (s)	10	-	-	-	18.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1180	0	0	860	10	0	0	0	20	0	10
Future Vol, veh/h	30	1180	0	0	860	10	0	0	0	20	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1283	0	0	935	11	0	0	0	22	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	946	0	0	1283	0	0	-	-	642	1649	2290	473
Stage 1	-	-	-	-	-	-	-	-	-	941	941	-
Stage 2	-	-	-	-	-	-	-	-	-	708	1349	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	721	-	-	537	-	-	0	0	417	65	39	538
Stage 1	-	-	-	-	-	-	0	0	-	283	340	-
Stage 2	-	-	-	-	-	-	0	0	-	392	217	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	721	-	-	537	-	-	-	-	417	63	37	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	63	37	-
Stage 1	-	-	-	-	-	-	-	-	-	270	340	-
Stage 2	-	-	-	-	-	-	-	-	-	374	207	-

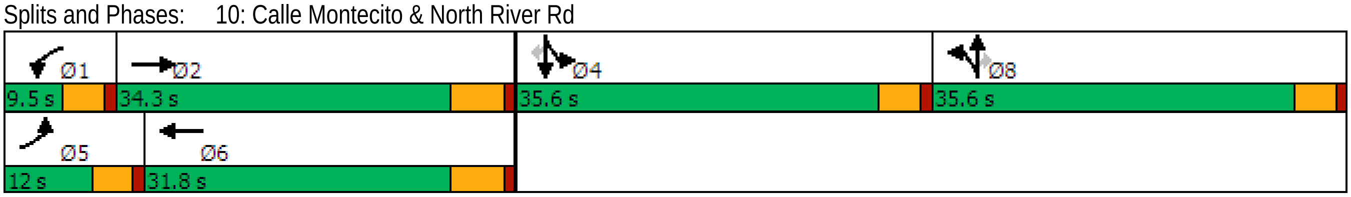
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	67.2
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	721	-	-	537	-	-	89
HCM Lane V/C Ratio	-	0.045	-	-	-	-	-	0.366
HCM Control Delay (s)	0	10.2	-	-	0	-	-	67.2
HCM Lane LOS	A	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	1.4

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	160	942	10	658	5	40	5	70
Future Volume (vph)	160	942	10	658	5	40	5	70
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.2	5.2	27.1	10.4	10.4	15.0	15.0
Actuated g/C Ratio	0.10	0.48	0.06	0.34	0.13	0.13	0.19	0.19
v/c Ratio	1.02	0.62	0.10	0.82	0.17	0.14	0.57	0.20
Control Delay	114.8	22.2	45.1	33.0	32.9	1.0	37.5	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.8	22.2	45.1	33.0	32.9	1.0	37.5	3.4
LOS	F	C	D	C	C	A	D	A
Approach Delay		35.5		33.2	16.0		27.8	
Approach LOS		D		C	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.4	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	942	10	10	658	230	30	5	40	170	5	70
Future Volume (veh/h)	160	942	10	10	658	230	30	5	40	170	5	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1024	11	11	715	250	33	5	43	185	5	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1572	17	25	858	300	147	22	150	259	7	237
Arrive On Green	0.12	0.44	0.44	0.01	0.33	0.33	0.09	0.09	0.09	0.15	0.15	0.15
Sat Flow, veh/h	1781	3602	39	1781	2582	903	1557	236	1585	1737	47	1585
Grp Volume(v), veh/h	174	505	530	11	492	473	38	0	43	190	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1708	1793	0	1585	1784	0	1585
Q Serve(g_s), s	6.1	14.2	14.2	0.4	16.2	16.2	1.2	0.0	1.6	6.4	0.0	2.7
Cycle Q Clear(g_c), s	6.1	14.2	14.2	0.4	16.2	16.2	1.2	0.0	1.6	6.4	0.0	2.7
Prop In Lane	1.00		0.02	1.00		0.53	0.87		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	211	776	813	25	590	567	170	0	150	266	0	237
V/C Ratio(X)	0.83	0.65	0.65	0.44	0.83	0.83	0.22	0.00	0.29	0.71	0.00	0.32
Avail Cap(c_a), veh/h	211	801	840	140	731	703	876	0	774	871	0	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	14.1	14.1	31.0	19.6	19.6	26.6	0.0	26.7	25.7	0.0	24.1
Incr Delay (d2), s/veh	22.9	1.8	1.7	12.0	6.8	7.1	0.7	0.0	1.0	3.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.4	5.6	0.2	7.2	6.9	0.5	0.0	0.6	2.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	15.9	15.8	43.1	26.4	26.6	27.2	0.0	27.8	29.2	0.0	24.9
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1209			976			81			266	
Approach Delay, s/veh		20.8			26.7			27.5			28.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	33.4		14.1	12.0	26.8		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0				
Max Q Clear Time (g_c+I1), s	2.4	16.2		8.4	8.1	18.2		3.6				
Green Ext Time (p_c), s	0.0	3.8		1.0	0.0	2.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	125	1037	829	60	0		
Future Volume (vph)	125	1037	829	60	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	19.0	54.9	45.4	35.6	35.6	9.5	35.6
Total Split (%)	19.0%	54.9%	45.4%	35.6%	35.6%	10%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	11.0	37.4	25.5	11.4	11.4		
Actuated g/C Ratio	0.18	0.60	0.41	0.18	0.18		
v/c Ratio	0.44	0.53	0.69	0.25	0.19		
Control Delay	34.1	8.8	20.2	27.6	0.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	34.1	8.8	20.2	27.6	0.9		
LOS	C	A	C	C	A		
Approach Delay		11.6	20.2		11.6		
Approach LOS		B	C		B		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 62.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1037	0	0	829	80	0	0	0	60	0	89
Future Volume (veh/h)	125	1037	0	0	829	80	0	0	0	60	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	1127	0	0	901	87	0	0	0	65	0	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	2088	0	4	1258	121	0	253	0	403	0	214
Arrive On Green	0.10	0.59	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1781	3647	0	1781	3274	316	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	136	1127	0	0	489	499	0	0	0	65	0	97
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1813	0	1870	0	1781	0	1585
Q Serve(g_s), s	3.3	8.5	0.0	0.0	10.4	10.4	0.0	0.0	0.0	1.5	0.0	2.5
Cycle Q Clear(g_c), s	3.3	8.5	0.0	0.0	10.4	10.4	0.0	0.0	0.0	1.5	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.17	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	2088	0	4	683	697	0	253	0	403	0	214
V/C Ratio(X)	0.75	0.54	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.16	0.00	0.45
Avail Cap(c_a), veh/h	582	3860	0	201	1549	1581	0	1306	0	1366	0	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	5.5	0.0	0.0	11.6	11.6	0.0	0.0	0.0	17.2	0.0	17.7
Incr Delay (d2), s/veh	6.0	0.2	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.9	0.0	0.0	3.4	3.5	0.0	0.0	0.0	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	5.7	0.0	0.0	13.0	13.0	0.0	0.0	0.0	17.4	0.0	19.2
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		1263			988			0			162	
Approach Delay, s/veh		7.9			13.0			0.0			18.5	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	32.8		11.6	9.0	23.7		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.0	48.2		30.0	14.5	38.7		* 31
Max Q Clear Time (g_c+I1), s	0.0	10.5		4.5	5.3	12.4		0.0
Green Ext Time (p_c), s	0.0	6.9		0.6	0.3	4.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

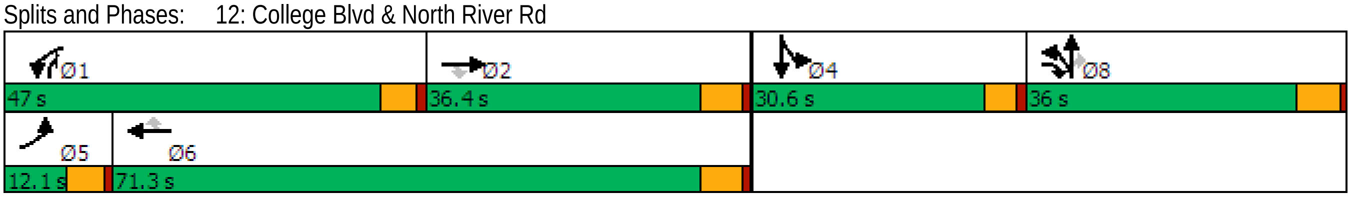
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	540	486	1270	448	70	40	1450	30	50
Future Volume (vph)	30	540	486	1270	448	70	40	1450	30	50
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	12.1	36.4	36.0	47.0	71.3	71.3	36.0	47.0	30.6	30.6
Total Split (%)	8.1%	24.3%	24.0%	31.3%	47.5%	47.5%	24.0%	31.3%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	25.8	57.8	42.4	66.6	66.6	30.6	78.8	11.5	11.5
Actuated g/C Ratio	0.05	0.20	0.45	0.33	0.52	0.52	0.24	0.61	0.09	0.09
v/c Ratio	0.37	0.83	0.60	1.23	0.27	0.09	1.09	0.80	0.21	0.36
Control Delay	75.6	61.5	9.9	147.9	20.4	3.3	116.4	15.2	58.7	59.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	61.5	9.9	147.9	20.4	3.3	116.4	15.2	58.7	59.7
LOS	E	E	A	F	C	A	F	B	E	E
Approach Delay		38.2			110.3		38.0			59.3
Approach LOS		D			F		D			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 129.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 65.3	Intersection LOS: E
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	540	486	1270	448	70	382	40	1450	30	50	5
Future Volume (veh/h)	30	540	486	1270	448	70	382	40	1450	30	50	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	587	528	1380	487	76	415	43	1576	33	54	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	835	740	1112	1884	840	376	39	1545	85	80	7
Arrive On Green	0.03	0.24	0.24	0.32	0.53	0.53	0.23	0.23	0.23	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1621	168	2790	1781	1686	156
Grp Volume(v), veh/h	33	587	528	1380	487	76	458	0	1576	33	0	59
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1789	0	1395	1781	0	1842
Q Serve(g_s), s	2.4	19.7	30.6	41.9	9.7	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Cycle Q Clear(g_c), s	2.4	19.7	30.6	41.9	9.7	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	48	835	740	1112	1884	840	415	0	1545	85	0	87
V/C Ratio(X)	0.69	0.70	0.71	1.24	0.26	0.09	1.10	0.00	1.02	0.39	0.00	0.67
Avail Cap(c_a), veh/h	96	835	740	1112	1884	840	415	0	1545	356	0	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.8	45.6	26.6	44.1	16.7	15.1	50.0	0.0	29.0	60.2	0.0	61.0
Incr Delay (d2), s/veh	16.4	2.7	3.2	116.1	0.1	0.0	75.2	0.0	28.1	2.9	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.0	18.2	35.7	4.0	1.1	22.1	0.0	28.9	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.2	48.3	29.9	160.2	16.7	15.1	125.1	0.0	57.1	63.1	0.0	69.7
LnGrp LOS	E	D	C	F	B	B	F	A	F	E	A	E
Approach Vol, veh/h		1148			1943			2034			92	
Approach Delay, s/veh		40.7			118.6			72.4			67.3	
Approach LOS		D			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.0	36.4		10.8	8.6	74.8		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	41.9	30.6		26.0	7.0	65.5		30.2				
Max Q Clear Time (g_c+I1), s	43.9	32.6		6.1	4.4	11.7		32.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			82.6
HCM 6th LOS			F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	90	110	1882	1646	60
Future Volume (vph)	30	90	110	1882	1646	60
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	16.9	6.6	66.4	51.9	51.9
Actuated g/C Ratio	0.14	0.21	0.08	0.83	0.65	0.65
v/c Ratio	0.13	0.29	0.42	0.70	0.78	0.06
Control Delay	31.0	23.6	42.3	9.0	16.3	6.0
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	31.0	23.6	42.3	9.3	16.3	6.0
LOS	C	C	D	A	B	A
Approach Delay	25.5			11.1	16.0	
Approach LOS	C			B	B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 79.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.7 — Intersection LOS: B
Intersection Capacity Utilization 67.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	90	110	1882	1646	60
Future Volume (veh/h)	30	90	110	1882	1646	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	98	120	2046	1789	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	188	290	268	2650	2114	943
Arrive On Green	0.11	0.11	0.08	0.75	0.60	0.60
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	33	98	120	2046	1789	65
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.2	3.8	2.3	24.1	28.7	1.2
Cycle Q Clear(g_c), s	1.2	3.8	2.3	24.1	28.7	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	188	290	268	2650	2114	943
V/C Ratio(X)	0.18	0.34	0.45	0.77	0.85	0.07
Avail Cap(c_a), veh/h	714	758	322	3134	2544	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	24.8	30.8	5.3	11.5	6.0
Incr Delay (d2), s/veh	0.4	0.7	1.2	1.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	1.0	5.3	9.7	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.9	25.5	32.0	6.4	14.0	6.0
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	131			2166	1854	
Approach Delay, s/veh	26.4			7.8	13.7	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.9		12.0	10.5	47.4
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		26.1		5.8	4.3	30.7
Green Ext Time (p_c), s		17.8		0.5	0.1	10.9

Intersection Summary		
HCM 6th Ctrl Delay		11.0
HCM 6th LOS		B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	168	20	60	10	40	90	1774	50	1607	139
Future Volume (vph)	168	20	60	10	40	90	1774	50	1607	139
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	11.9	62.1	11.2	61.4	61.4
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	10.8%	56.5%	10.2%	55.8%	55.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	19.2	19.2		19.2	19.2	6.9	57.0	6.1	53.5	53.5
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.07	0.60	0.06	0.56	0.56
v/c Ratio	0.69	0.30		0.29	0.11	0.77	0.67	0.48	0.88	0.16
Control Delay	49.6	11.3		35.4	2.2	83.3	16.2	61.7	25.9	7.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	2.3	0.0
Total Delay	49.6	11.3		35.4	2.2	83.3	16.2	61.7	28.2	7.3
LOS	D	B		D	A	F	B	E	C	A
Approach Delay		34.4		23.4			19.3		27.5	
Approach LOS		C		C			B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 95.4	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	20	90	60	10	40	90	1774	100	50	1607	139
Future Volume (veh/h)	168	20	90	60	10	40	90	1774	100	50	1607	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	22	98	65	11	43	98	1928	109	54	1747	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	78	346	294	45	412	117	2722	153	69	1861	830
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.07	0.55	0.55	0.04	0.52	0.52
Sat Flow, veh/h	1350	299	1332	883	173	1585	1781	4945	279	1781	3554	1585
Grp Volume(v), veh/h	183	0	120	76	0	43	98	1325	712	54	1747	151
Grp Sat Flow(s),veh/h/ln	1350	0	1631	1056	0	1585	1781	1702	1820	1781	1777	1585
Q Serve(g_s), s	13.7	0.0	6.1	4.5	0.0	2.1	5.6	29.6	29.8	3.1	47.6	5.2
Cycle Q Clear(g_c), s	24.2	0.0	6.1	10.6	0.0	2.1	5.6	29.6	29.8	3.1	47.6	5.2
Prop In Lane	1.00		0.82	0.86		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	283	0	423	339	0	412	117	1874	1002	69	1861	830
V/C Ratio(X)	0.65	0.00	0.28	0.22	0.00	0.10	0.84	0.71	0.71	0.78	0.94	0.18
Avail Cap(c_a), veh/h	350	0	505	405	0	490	117	1874	1002	105	1910	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	30.6	34.1	0.0	29.1	47.8	17.1	17.2	49.3	23.1	13.0
Incr Delay (d2), s/veh	2.9	0.0	0.4	0.3	0.0	0.1	38.5	1.2	2.4	18.2	9.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	2.4	1.6	0.0	0.8	3.7	11.2	12.4	1.7	21.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	31.0	34.5	0.0	29.2	86.3	18.4	19.5	67.5	32.6	13.1
LnGrp LOS	D	A	C	C	A	C	F	B	B	E	C	B
Approach Vol, veh/h		303			119			2135			1952	
Approach Delay, s/veh		39.6			32.6			21.9			32.0	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	62.7		31.5	11.9	60.0		31.5				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.1	56.3		* 32	6.8	55.6		* 32				
Max Q Clear Time (g_c+I1), s	5.1	31.8		26.2	7.6	49.6		12.6				
Green Ext Time (p_c), s	0.0	12.6		0.6	0.0	4.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			27.7
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	10	10	510	1681	5	1470
Future Volume (vph)	10	10	10	510	1681	5	1470
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	31.0	81.9	11.1	62.0
Total Split (%)	22.0%	16.0%	16.0%	20.7%	54.6%	7.4%	41.3%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	25.6	12.1	12.1	25.2	81.8	6.0	53.5
Actuated g/C Ratio	0.18	0.09	0.09	0.18	0.59	0.04	0.39
v/c Ratio	0.87	0.56	0.04	0.89	0.66	0.06	0.90
Control Delay	60.7	75.7	0.3	73.0	21.5	69.6	47.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	75.7	0.3	73.0	21.5	69.6	47.5
LOS	E	E	A	E	C	E	D
Approach Delay	60.7	67.3			32.9		47.5
Approach LOS	E	E			C		D

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 138.5	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 42.0	Intersection LOS: D
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

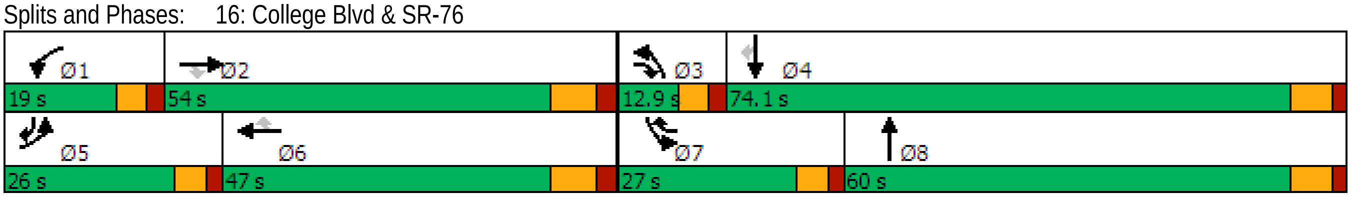
Splits and Phases: 15: College Blvd & Via Cupeno

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	10	220	70	10	10	510	1681	120	5	1470	137
Future Volume (veh/h)	313	10	220	70	10	10	510	1681	120	5	1470	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	340	11	239	76	11	11	554	1827	130	5	1598	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	14	315	98	14	100	620	2700	192	14	1820	170
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.18	0.55	0.55	0.01	0.38	0.38
Sat Flow, veh/h	1781	70	1526	1565	227	1585	3456	4867	345	1781	4752	443
Grp Volume(v), veh/h	340	0	250	87	0	11	554	1276	681	5	1144	603
Grp Sat Flow(s),veh/h/ln	1781	0	1596	1792	0	1585	1728	1702	1808	1781	1702	1791
Q Serve(g_s), s	24.4	0.0	19.2	6.2	0.0	0.9	20.4	34.7	35.0	0.4	40.6	40.7
Cycle Q Clear(g_c), s	24.4	0.0	19.2	6.2	0.0	0.9	20.4	34.7	35.0	0.4	40.6	40.7
Prop In Lane	1.00		0.96	0.87		1.00	1.00		0.19	1.00		0.25
Lane Grp Cap(c), veh/h	368	0	329	113	0	100	620	1889	1003	14	1304	686
V/C Ratio(X)	0.92	0.00	0.76	0.77	0.00	0.11	0.89	0.68	0.68	0.37	0.88	0.88
Avail Cap(c_a), veh/h	383	0	343	262	0	231	688	1965	1044	82	1444	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	48.6	60.0	0.0	57.5	52.2	20.6	20.7	64.2	37.3	37.3
Incr Delay (d2), s/veh	27.4	0.0	9.1	10.6	0.0	0.5	13.3	0.9	1.7	15.8	6.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	0.0	8.5	3.2	0.0	0.4	10.0	13.7	14.9	0.2	17.8	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	0.0	57.7	70.7	0.0	58.0	65.4	21.5	22.4	80.0	43.3	48.1
LnGrp LOS	E	A	E	E	A	E	E	C	C	F	D	D
Approach Vol, veh/h		590			98			2511			1752	
Approach Delay, s/veh		69.4			69.3			31.4			45.1	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	79.0		31.9	28.4	56.6		13.2				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	75.1		28.0	25.9	55.2		19.0				
Max Q Clear Time (g_c+I1), s	2.4	37.0		26.4	22.4	42.7		8.2				
Green Ext Time (p_c), s	0.0	14.3		0.5	1.0	7.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	658	1580	70	390	1070	740	60	883	651	880	519
Future Volume (vph)	658	1580	70	390	1070	740	60	883	651	880	519
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	26.0	54.0	12.9	19.0	47.0	27.0	12.9	60.0	27.0	74.1	26.0
Total Split (%)	16.3%	33.8%	8.1%	11.9%	29.4%	16.9%	8.1%	37.5%	16.9%	46.3%	16.3%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	20.3	46.0	61.0	13.3	39.0	68.3	7.0	53.2	21.3	67.5	94.6
Actuated g/C Ratio	0.13	0.29	0.38	0.08	0.24	0.43	0.04	0.33	0.13	0.42	0.59
v/c Ratio	1.64	1.18	0.11	1.49	0.94	1.09	0.43	1.24	1.55	0.64	0.58
Control Delay	340.0	135.2	2.4	283.6	73.6	99.1	83.7	156.2	300.4	39.1	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	340.0	135.2	2.4	283.6	73.6	99.1	83.7	156.2	300.4	39.1	20.4
LOS	F	F	A	F	E	F	F	F	F	D	C
Approach Delay		189.6			119.4			153.0		117.4	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.64	
Intersection Signal Delay: 145.1	Intersection LOS: F
Intersection Capacity Utilization 120.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	658	1580	70	390	1070	740	60	883	430	651	880	519
Future Volume (veh/h)	658	1580	70	390	1070	740	60	883	430	651	880	519
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	715	1717	76	424	1163	804	65	960	467	708	957	564
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1468	503	287	1245	597	102	775	371	460	1550	892
Arrive On Green	0.13	0.29	0.29	0.08	0.24	0.24	0.03	0.33	0.33	0.13	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2332	1114	3456	3554	1585
Grp Volume(v), veh/h	715	1717	76	424	1163	804	65	727	700	708	957	564
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1670	1728	1777	1585
Q Serve(g_s), s	20.3	46.0	5.5	13.3	35.7	39.0	3.0	53.2	53.2	21.3	33.3	38.6
Cycle Q Clear(g_c), s	20.3	46.0	5.5	13.3	35.7	39.0	3.0	53.2	53.2	21.3	33.3	38.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	438	1468	503	287	1245	597	102	591	555	460	1550	892
V/C Ratio(X)	1.63	1.17	0.15	1.48	0.93	1.35	0.64	1.23	1.26	1.54	0.62	0.63
Avail Cap(c_a), veh/h	438	1468	503	287	1245	597	156	591	555	460	1550	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	57.0	39.2	73.3	59.2	49.8	76.8	53.4	53.4	69.3	34.8	23.7
Incr Delay (d2), s/veh	294.1	84.0	0.1	232.1	12.9	166.6	6.4	118.2	131.2	253.2	0.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.9	31.2	2.2	15.2	16.9	51.4	1.4	43.1	42.5	25.6	14.7	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	363.9	141.0	39.3	305.5	72.1	216.5	83.2	171.6	184.6	322.6	35.6	25.2
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	D	C
Approach Vol, veh/h		2508			2391			1492			2229	
Approach Delay, s/veh		201.5			162.0			173.8			124.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	54.0	10.4	76.6	26.0	47.0	27.0	60.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 13	46.0	* 7.2	67.3	* 20	39.0	* 21	53.2
Max Q Clear Time (g_c+I1), s	15.3	48.0	5.0	40.6	22.3	41.0	23.3	55.2
Green Ext Time (p_c), s	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	165.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	90	110	150	569	130	280	845	925	310	1079	70
Future Volume (vph)	90	110	150	569	130	280	845	925	310	1079	70
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	16.0	30.0	30.0	21.0	35.0	23.0	47.0	47.0	22.0	46.0	46.0
Total Split (%)	13.3%	25.0%	25.0%	17.5%	29.2%	19.2%	39.2%	39.2%	18.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	10.3	15.7	15.7	17.1	22.4	19.1	43.1	43.1	18.1	42.1	42.1
Actuated g/C Ratio	0.09	0.14	0.14	0.16	0.20	0.17	0.39	0.39	0.16	0.38	0.38
v/c Ratio	0.59	0.45	0.45	1.16	0.76	0.99	0.46	1.08	1.16	0.87	0.11
Control Delay	64.1	47.9	10.2	134.1	48.4	96.5	26.5	71.3	145.7	40.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	47.9	10.2	134.1	48.4	96.5	26.5	71.3	145.7	40.3	1.6
LOS	E	D	B	F	D	F	C	E	F	D	A
Approach Delay		35.9			106.5		56.3			60.8	
Approach LOS		D			F		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 65.2	Intersection LOS: E
Intersection Capacity Utilization 90.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	110	150	569	130	140	280	845	925	310	1079	70
Future Volume (veh/h)	90	110	150	569	130	140	280	845	925	310	1079	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	120	163	618	141	152	304	918	1005	337	1173	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	238	202	545	178	191	314	2038	633	298	1385	618
Arrive On Green	0.07	0.13	0.13	0.16	0.22	0.22	0.18	0.40	0.40	0.17	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	3456	823	887	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	98	120	163	618	0	293	304	918	1005	337	1173	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1711	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	5.8	6.4	10.8	17.0	0.0	17.5	18.3	14.2	43.0	18.0	32.4	3.3
Cycle Q Clear(g_c), s	5.8	6.4	10.8	17.0	0.0	17.5	18.3	14.2	43.0	18.0	32.4	3.3
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	238	202	545	0	369	314	2038	633	298	1385	618
V/C Ratio(X)	0.79	0.50	0.81	1.13	0.00	0.79	0.97	0.45	1.59	1.13	0.85	0.12
Avail Cap(c_a), veh/h	198	451	383	545	0	492	314	2038	633	298	1385	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	43.8	45.7	45.4	0.0	40.0	44.1	23.7	32.4	44.9	29.9	21.1
Incr Delay (d2), s/veh	10.7	1.6	7.4	80.8	0.0	6.4	41.9	0.7	272.3	92.8	6.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.1	4.6	13.3	0.0	7.9	11.6	5.8	63.7	15.5	14.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	45.5	53.1	126.2	0.0	46.4	86.0	24.4	304.7	137.6	36.5	21.5
LnGrp LOS	E	D	D	F	A	D	F	C	F	F	D	C
Approach Vol, veh/h		381			911			2227			1586	
Approach Delay, s/veh		52.5			100.5			159.3			57.3	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	47.0	21.0	17.7	23.0	46.0	11.5	27.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	43.0	17.0	26.0	19.0	42.0	12.0	31.0
Max Q Clear Time (g_c+I1), s	20.0	45.0	19.0	12.8	20.3	34.4	7.8	19.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	4.7	0.1	1.3

Intersection Summary			
HCM 6th Ctrl Delay			109.1
HCM 6th LOS			F

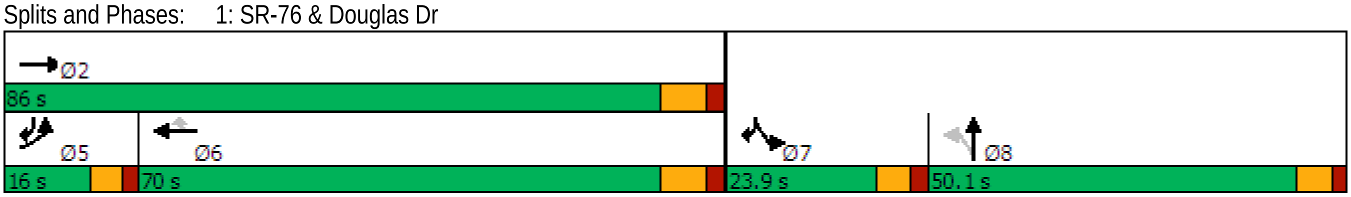
Appendix P

Horizon Year 2035 MTP + Project Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	300	1110	2170	240	280	610	
Future Volume (vph)	300	1110	2170	240	280	610	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	10.3	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	16.0	33.0	33.0	33.0	22.1		50.1
Total Split (s)	16.0	86.0	70.0	70.0	23.9		50.1
Total Split (%)	10.0%	53.8%	43.8%	43.8%	14.9%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	10.3	78.0	62.0	62.0	17.8	34.2	
Actuated g/C Ratio	0.09	0.71	0.56	0.56	0.16	0.31	
v/c Ratio	1.02	0.48	1.18	0.26	1.06	0.50	
Control Delay	104.1	7.8	112.3	3.0	115.6	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	104.1	7.8	112.3	3.0	115.6	3.8	
LOS	F	A	F	A	F	A	
Approach Delay		28.3	101.4				
Approach LOS		C	F				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 67.7	Intersection LOS: E
Intersection Capacity Utilization 98.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1110	0	0	2170	240	0	0	0	280	0	610
Future Volume (veh/h)	300	1110	0	0	2170	240	0	0	0	280	0	610
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	326	1207	0	0	2359	261	0	0	0	304	0	663
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	324	2522	0	0	2005	894	0	2	0	289	0	0
Arrive On Green	0.09	0.71	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.16	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	304	
Grp Volume(v), veh/h	326	1207	0	0	2359	261	0	0	0	304	113.8	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	10.3	16.4	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Cycle Q Clear(g_c), s	10.3	16.4	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	324	2522	0	0	2005	894	0	2	0	289		
V/C Ratio(X)	1.01	0.48	0.00	0.00	1.18	0.29	0.00	0.00	0.00	1.05		
Avail Cap(c_a), veh/h	324	2522	0	0	2005	894	0	749	0	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	49.8	7.0	0.0	0.0	23.9	12.5	0.0	0.0	0.0	46.1		
Incr Delay (d2), s/veh	51.7	0.1	0.0	0.0	85.1	0.2	0.0	0.0	0.0	67.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	5.5	0.0	0.0	47.6	3.3	0.0	0.0	0.0	13.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.5	7.2	0.0	0.0	109.0	12.7	0.0	0.0	0.0	113.8		
LnGrp LOS	F	A	A	A	F	B	A	A	A	F		
Approach Vol, veh/h		1533			2620			0				
Approach Delay, s/veh		27.2			99.4			0.0				
Approach LOS		C			F							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		86.0			16.0	70.0	23.9	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		78.0			* 10	62.0	17.8	44.0				
Max Q Clear Time (g_c+I1), s		18.4			12.3	64.0	19.8	0.0				
Green Ext Time (p_c), s		7.8			0.0	0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		75.6
HCM 6th LOS		E

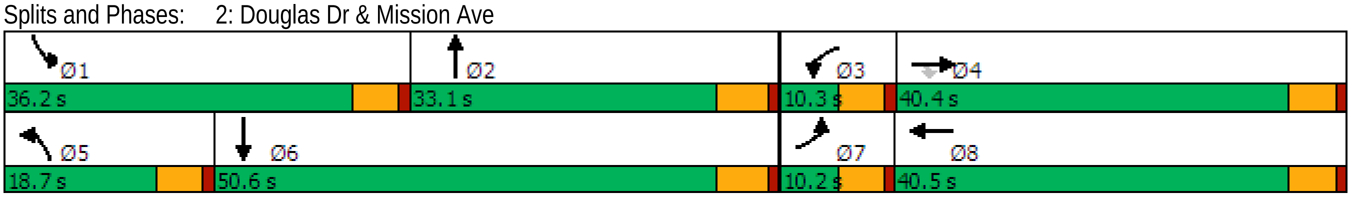
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	80	310	70	60	530	130	360	450	820
Future Volume (vph)	80	310	70	60	530	130	360	450	820
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.2	40.4	40.4	10.3	40.5	18.7	33.1	36.2	50.6
Total Split (%)	8.5%	33.7%	33.7%	8.6%	33.8%	15.6%	27.6%	30.2%	42.2%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.2	30.3	30.3	5.3	33.0	12.4	19.9	31.6	39.1
Actuated g/C Ratio	0.05	0.28	0.28	0.05	0.30	0.11	0.18	0.29	0.36
v/c Ratio	0.53	0.34	0.14	0.76	0.89	0.70	0.62	0.95	0.78
Control Delay	66.5	32.5	0.5	102.9	42.5	68.1	45.6	70.5	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	32.5	0.5	102.9	42.5	68.1	45.6	70.5	36.9
LOS	E	C	A	F	D	E	D	E	D
Approach Delay		33.5			46.2		51.4		48.0
Approach LOS		C			D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 46.0	Intersection LOS: D
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	310	70	60	530	380	130	360	10	450	820	90
Future Volume (veh/h)	80	310	70	60	530	380	130	360	10	450	820	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	337	76	65	576	413	141	391	11	489	891	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	1121	500	83	628	450	175	493	14	518	1073	118
Arrive On Green	0.04	0.32	0.32	0.05	0.32	0.32	0.10	0.14	0.14	0.29	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	1781	1976	1417	1781	3530	99	1781	3228	355
Grp Volume(v), veh/h	87	337	76	65	518	471	141	196	206	489	490	499
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1615	1781	1777	1853	1781	1777	1806
Q Serve(g_s), s	2.6	7.4	3.6	3.7	29.0	29.0	8.0	11.1	11.1	27.7	26.3	26.3
Cycle Q Clear(g_c), s	2.6	7.4	3.6	3.7	29.0	29.0	8.0	11.1	11.1	27.7	26.3	26.3
Prop In Lane	1.00		1.00	1.00		0.88	1.00		0.05	1.00		0.20
Lane Grp Cap(c), veh/h	153	1121	500	83	565	514	175	248	259	518	591	600
V/C Ratio(X)	0.57	0.30	0.15	0.78	0.92	0.92	0.81	0.79	0.79	0.94	0.83	0.83
Avail Cap(c_a), veh/h	171	1203	537	90	603	549	234	469	489	536	770	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	26.8	25.4	48.7	33.9	33.9	45.6	43.0	43.0	35.8	31.8	31.8
Incr Delay (d2), s/veh	3.5	0.1	0.1	32.5	18.3	19.7	13.8	5.6	5.5	25.1	6.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.1	1.4	2.4	15.1	13.9	4.2	5.2	5.4	15.4	12.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	26.9	25.6	81.3	52.3	53.6	59.5	48.6	48.5	61.0	37.8	37.7
LnGrp LOS	D	C	C	F	D	D	E	D	D	E	D	D
Approach Vol, veh/h		500			1054			543			1478	
Approach Delay, s/veh		31.1			54.7			51.4			45.4	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.2	20.2	9.9	38.0	15.3	40.2	9.7	38.3
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	31.1	27.3	5.2	35.0	13.6	44.8	5.1	35.1
Max Q Clear Time (g_c+I1), s	29.7	13.1	5.7	9.4	10.0	28.3	4.6	31.0
Green Ext Time (p_c), s	0.3	1.3	0.0	1.9	0.1	4.2	0.0	1.9

Intersection Summary		
HCM 6th Ctrl Delay		47.0
HCM 6th LOS		D

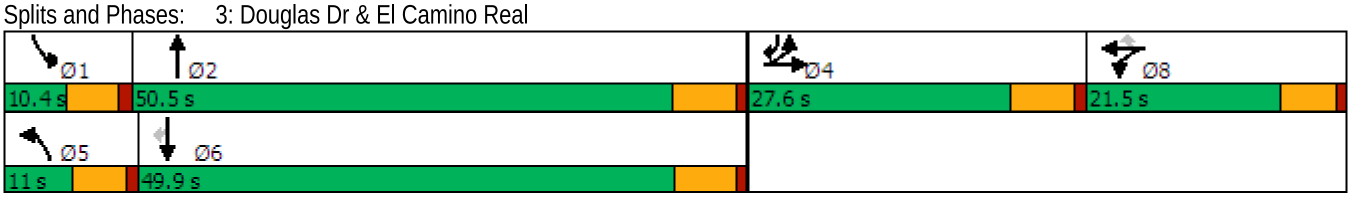
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	380	20	50	40	5	60	660	10	1260	1280
Future Volume (vph)	380	20	50	40	5	60	660	10	1260	1280
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	27.6	27.6		21.5	21.5	11.0	50.5	10.4	49.9	27.6
Total Split (%)	25.1%	25.1%		19.5%	19.5%	10.0%	45.9%	9.5%	45.4%	25.1%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	20.5	20.5	101.5	12.3	12.3	5.7	48.5	5.1	42.4	69.0
Actuated g/C Ratio	0.20	0.20	1.00	0.12	0.12	0.06	0.48	0.05	0.42	0.68
v/c Ratio	0.60	0.06	0.03	0.59	0.02	0.66	0.45	0.12	0.93	0.73
Control Delay	42.2	36.2	0.0	55.6	0.0	81.1	19.4	53.3	41.5	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	36.2	0.0	55.6	0.0	81.1	19.4	53.3	41.5	14.6
LOS	D	D	A	E	A	F	B	D	D	B
Approach Delay		37.3		53.6			24.3		28.0	
Approach LOS		D		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 101.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	20	50	80	40	5	60	660	40	10	1260	1280
Future Volume (veh/h)	380	20	50	80	40	5	60	660	40	10	1260	1280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	413	22	0	87	43	5	65	717	43	11	1370	1391
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	282		111	55	145	84	1689	101	24	1643	1711
Arrive On Green	0.15	0.15	0.00	0.09	0.09	0.09	0.05	0.50	0.50	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1211	599	1585	1781	3406	204	1781	3554	2790
Grp Volume(v), veh/h	413	22	0	130	0	5	65	374	386	11	1370	1391
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1834	1781	1777	1395
Q Serve(g_s), s	10.8	0.9	0.0	6.6	0.0	0.3	3.4	12.6	12.6	0.6	31.6	36.1
Cycle Q Clear(g_c), s	10.8	0.9	0.0	6.6	0.0	0.3	3.4	12.6	12.6	0.6	31.6	36.1
Prop In Lane	1.00		1.00	0.67		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	522	282		165	0	145	84	881	909	24	1643	1711
V/C Ratio(X)	0.79	0.08		0.79	0.00	0.03	0.78	0.42	0.42	0.46	0.83	0.81
Avail Cap(c_a), veh/h	789	427		309	0	271	106	881	909	95	1664	1728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	34.2	0.0	41.7	0.0	38.8	44.2	15.1	15.1	45.9	22.1	14.0
Incr Delay (d2), s/veh	3.2	0.1	0.0	8.0	0.0	0.1	23.8	0.3	0.3	13.5	3.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.4	0.0	3.3	0.0	0.1	2.0	4.9	5.1	0.3	13.3	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	34.3	0.0	49.7	0.0	38.9	68.0	15.4	15.4	59.4	25.9	17.1
LnGrp LOS	D	C		D	A	D	E	B	B	E	C	B
Approach Vol, veh/h		435	A		135			825			2772	
Approach Delay, s/veh		41.2			49.3			19.6			21.6	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	52.7		20.4	9.8	49.5		14.1				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	44.3		21.4	5.6	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.6	14.6		12.8	5.4	38.1		8.6				
Green Ext Time (p_c), s	0.0	3.4		1.4	0.0	5.3		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			24.1
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

LOS Engineering, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	80	5	110	10	5	50	1010	20	20	2240	80
Future Volume (vph)	80	5	110	10	5	50	1010	20	20	2240	80
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	82.4	21.0	11.5	83.5	30.1
Total Split (%)	20.8%	20.8%	20.8%	14.5%	14.5%	7.2%	56.8%	14.5%	7.9%	57.6%	20.8%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	6.8	6.8	5.0	82.1	89.7	6.0	78.2	95.4
Actuated g/C Ratio	0.09	0.09	0.09	0.06	0.06	0.04	0.68	0.74	0.05	0.65	0.79
v/c Ratio	0.30	0.30	0.47	0.11	0.31	0.74	0.46	0.02	0.25	1.06	0.07
Control Delay	56.3	56.2	15.0	60.0	28.9	108.1	12.2	0.1	66.2	60.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	56.2	15.0	60.0	28.9	108.1	12.2	0.1	66.2	60.0	1.0
LOS	E	E	B	E	C	F	B	A	E	E	A
Approach Delay		32.9			35.9		16.4			58.0	
Approach LOS		C			D		B			E	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 120.5	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 44.1	Intersection LOS: D
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	5	110	10	5	30	50	1010	20	20	2240	80
Future Volume (veh/h)	80	5	110	10	5	30	50	1010	20	20	2240	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	0	120	11	5	33	54	1098	22	22	2435	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	153	72	9	56	69	2347	1110	39	2285	1172
Arrive On Green	0.10	0.00	0.10	0.04	0.04	0.04	0.04	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	91	0	120	11	0	38	54	1098	22	22	2435	87
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.8	0.0	8.9	0.7	0.0	2.8	3.6	18.3	0.5	1.5	77.3	1.8
Cycle Q Clear(g_c), s	2.8	0.0	8.9	0.7	0.0	2.8	3.6	18.3	0.5	1.5	77.3	1.8
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	153	72	0	65	69	2347	1110	39	2285	1172
V/C Ratio(X)	0.26	0.00	0.78	0.15	0.00	0.58	0.78	0.47	0.02	0.57	1.07	0.07
Avail Cap(c_a), veh/h	741	0	330	236	0	214	74	2347	1110	90	2285	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	0.0	53.1	55.7	0.0	56.7	57.3	10.0	5.5	58.3	21.5	4.3
Incr Delay (d2), s/veh	0.4	0.0	8.5	1.0	0.0	8.1	37.8	0.1	0.0	12.6	39.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.9	0.3	0.0	1.3	2.4	6.8	0.2	0.8	41.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	61.6	56.7	0.0	64.8	95.1	10.2	5.5	70.9	60.7	4.3
LnGrp LOS	D	A	E	E	A	E	F	B	A	E	F	A
Approach Vol, veh/h		211			49			1174			2544	
Approach Delay, s/veh		56.9			63.0			14.0			58.8	
Approach LOS		E			E			B			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	85.6		16.7	10.1	83.5		9.9				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	6.1	76.2		25.0	5.0	77.3		15.9				
Max Q Clear Time (g_c+I1), s	3.5	20.3		10.9	5.6	79.3		4.8				
Green Ext Time (p_c), s	0.0	6.9		0.7	0.0	0.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay			45.5
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	20	5	130	80	5	10	1100	40	5	2130	40
Future Volume (vph)	20	5	130	80	5	10	1100	40	5	2130	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	73.0	73.0	10.4	83.4	83.4
Total Split (%)	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	60.8%	60.8%	8.7%	69.5%	69.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		14.7	14.7		14.7	14.7	78.2	78.2	5.0	80.0	80.0
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.74	0.74	0.05	0.75	0.75
v/c Ratio		0.14	0.48		0.50	0.04	0.46	0.04	0.06	0.87	0.04
Control Delay		38.3	22.8		49.4	0.2	8.3	1.5	52.8	15.9	4.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.3	22.8		49.4	0.2	8.3	1.5	52.8	15.9	4.0
LOS		D	C		D	A	A	A	D	B	A
Approach Delay		25.3			44.2		8.1			15.8	
Approach LOS		C			D		A			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

LOS Engineering, Inc.

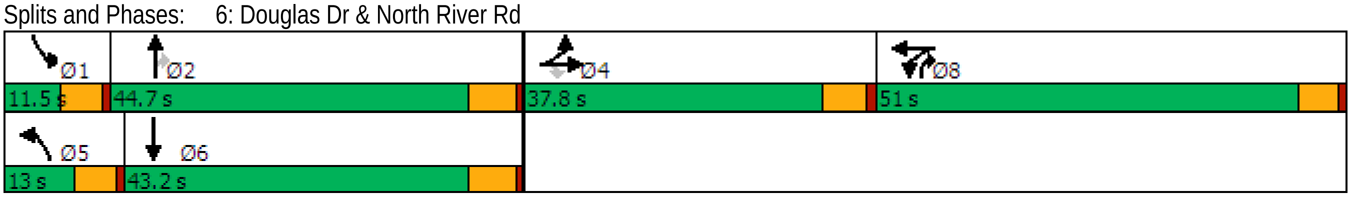
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	130	80	5	10	0	1100	40	5	2130	40
Future Volume (veh/h)	20	5	130	80	5	10	0	1100	40	5	2130	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	5	141	87	5	11	0	1196	43	5	2315	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	54	7	423	58	2	423	0	2089	932	11	2271	1013
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.00	0.59	0.59	0.01	0.64	0.64
Sat Flow, veh/h	0	27	1585	0	7	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	27	0	141	92	0	11	0	1196	43	5	2315	43
Grp Sat Flow(s),veh/h/ln	27	0	1585	7	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	8.6	0.0	0.0	0.6	0.0	25.1	1.4	0.3	76.7	1.2
Cycle Q Clear(g_c), s	32.0	0.0	8.6	32.0	0.0	0.6	0.0	25.1	1.4	0.3	76.7	1.2
Prop In Lane	0.81		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	0	423	60	0	423	0	2089	932	11	2271	1013
V/C Ratio(X)	0.44	0.00	0.33	1.53	0.00	0.03	0.00	0.57	0.05	0.44	1.02	0.04
Avail Cap(c_a), veh/h	62	0	423	60	0	423	0	2089	932	74	2271	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	35.4	59.0	0.0	32.5	0.0	15.4	10.5	59.4	21.6	8.0
Incr Delay (d2), s/veh	4.8	0.0	0.5	305.0	0.0	0.0	0.0	0.4	0.0	24.3	23.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.4	6.9	0.0	0.2	0.0	9.9	0.5	0.2	36.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	0.0	35.9	364.1	0.0	32.5	0.0	15.7	10.5	83.7	45.5	8.0
LnGrp LOS	E	A	D	F	A	C	A	B	B	F	F	A
Approach Vol, veh/h		168			103			1239			2363	
Approach Delay, s/veh		39.2			328.7			15.6			44.9	
Approach LOS		D			F			B			D	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	77.2		36.6		83.4		36.6				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	66.3		32.0		76.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	27.1		34.0		78.7		34.0				
Green Ext Time (p_c), s	0.0	7.8		0.0		0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			42.8									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	110	220	1090	50	80	500	430	20	810
Future Volume (vph)	60	110	220	1090	50	80	500	430	20	810
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	51.0	51.0	13.0	44.7	51.0	11.5	43.2
Total Split (%)	26.1%	26.1%	26.1%	35.2%	35.2%	9.0%	30.8%	35.2%	7.9%	29.8%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	18.9	18.9	18.9	45.8	45.8	7.6	43.5	92.4	6.0	37.1
Actuated g/C Ratio	0.14	0.14	0.14	0.35	0.35	0.06	0.33	0.70	0.05	0.28
v/c Ratio	0.26	0.24	0.76	1.06	1.02dl	0.86	0.47	0.22	0.28	0.90
Control Delay	51.6	50.3	45.0	98.1	39.3	119.7	39.2	0.9	73.0	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	50.3	45.0	98.1	39.3	119.7	39.2	0.9	73.0	59.1
LOS	D	D	D	F	D	F	D	A	E	E
Approach Delay		47.5			66.9		29.2			59.4
Approach LOS		D			E		C			E

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 132.3
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 51.7 Intersection LOS: D
Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	110	220	1090	50	20	80	500	430	20	810	10
Future Volume (veh/h)	60	110	220	1090	50	20	80	500	430	20	810	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	120	239	1185	54	22	87	543	467	22	880	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	623	278	1196	424	173	100	1068	1774	37	953	12
Arrive On Green	0.18	0.18	0.18	0.56	0.34	0.34	0.06	0.30	0.50	0.02	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	3563	1263	515	1781	3554	2790	1781	3594	45
Grp Volume(v), veh/h	65	120	239	1185	0	76	87	543	467	22	435	456
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1778	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	4.2	3.9	19.9	44.7	0.0	4.0	6.6	17.1	8.2	1.7	32.4	32.4
Cycle Q Clear(g_c), s	4.2	3.9	19.9	44.7	0.0	4.0	6.6	17.1	8.2	1.7	32.4	32.4
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	312	623	278	1196	0	597	100	1068	1774	37	471	494
V/C Ratio(X)	0.21	0.19	0.86	0.99	0.00	0.13	0.87	0.51	0.26	0.59	0.92	0.92
Avail Cap(c_a), veh/h	419	837	373	1196	0	597	100	1068	1774	80	484	507
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	47.8	54.4	29.7	0.0	31.3	63.7	39.2	7.5	66.0	48.6	48.6
Incr Delay (d2), s/veh	0.5	0.2	15.9	23.8	0.0	0.1	52.1	0.8	0.2	14.3	24.1	23.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.8	9.2	19.6	0.0	1.8	4.4	7.7	4.6	0.9	17.5	18.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	48.0	70.3	53.5	0.0	31.5	115.8	40.1	7.6	80.3	72.6	71.8
LnGrp LOS	D	D	E	D	A	C	F	D	A	F	E	E
Approach Vol, veh/h		424			1261			1097			913	
Approach Delay, s/veh		60.6			52.2			32.3			72.4	
Approach LOS		E			D			C			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	47.0		29.6	13.0	42.2		51.0				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	6.1	38.5		32.0	7.6	37.0		45.6				
Max Q Clear Time (g_c+I1), s	3.7	19.1		21.9	8.6	34.4		46.7				
Green Ext Time (p_c), s	0.0	9.4		1.9	0.0	1.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			52.2									
HCM 6th LOS			D									

Notes

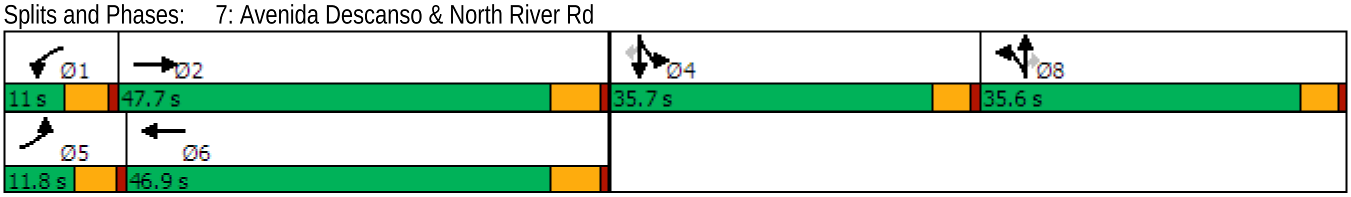
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	550	20	1050	5	40	10	130
Future Volume (vph)	60	550	20	1050	5	40	10	130
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6
Total Split (s)	11.8	47.7	11.0	46.9	35.6	35.6	35.7	35.7
Total Split (%)	9.1%	36.7%	8.5%	36.1%	27.4%	27.4%	27.5%	27.5%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	6.9	48.1	6.0	42.7	9.9	9.9	15.0	15.0
Actuated g/C Ratio	0.07	0.52	0.06	0.46	0.11	0.11	0.16	0.16
v/c Ratio	0.49	0.33	0.19	0.73	0.05	0.16	0.57	0.41
Control Delay	59.9	17.8	52.6	27.1	39.0	1.4	44.9	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	17.8	52.6	27.1	39.0	1.4	44.9	16.0
LOS	E	B	D	C	D	A	D	B
Approach Delay		21.9		27.5	8.5		31.5	
Approach LOS		C		C	A		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.4	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	550	10	20	1050	50	5	5	40	140	10	130
Future Volume (veh/h)	60	550	10	20	1050	50	5	5	40	140	10	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	598	11	22	1141	54	5	5	43	152	11	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	1560	29	45	1413	67	84	84	146	227	16	216
Arrive On Green	0.05	0.44	0.44	0.03	0.41	0.41	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1781	3570	66	1781	3454	163	912	912	1585	1666	121	1585
Grp Volume(v), veh/h	65	298	311	22	587	608	10	0	43	163	0	141
Grp Sat Flow(s),veh/h/ln	1781	1777	1859	1781	1777	1841	1825	0	1585	1787	0	1585
Q Serve(g_s), s	2.3	7.4	7.4	0.8	18.9	19.0	0.3	0.0	1.6	5.6	0.0	5.5
Cycle Q Clear(g_c), s	2.3	7.4	7.4	0.8	18.9	19.0	0.3	0.0	1.6	5.6	0.0	5.5
Prop In Lane	1.00		0.04	1.00		0.09	0.50		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	95	776	812	45	727	753	168	0	146	244	0	216
V/C Ratio(X)	0.69	0.38	0.38	0.49	0.81	0.81	0.06	0.00	0.29	0.67	0.00	0.65
Avail Cap(c_a), veh/h	184	1145	1198	162	1123	1164	870	0	756	855	0	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.3	12.4	12.4	31.3	17.0	17.0	26.9	0.0	27.5	26.7	0.0	26.6
Incr Delay (d2), s/veh	8.5	0.3	0.3	8.0	2.5	2.5	0.1	0.0	1.1	3.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.7	2.8	0.4	7.3	7.6	0.1	0.0	0.6	2.5	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	12.7	12.7	39.3	19.5	19.4	27.1	0.0	28.6	29.8	0.0	29.9
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		674			1217			53			304	
Approach Delay, s/veh		15.2			19.8			28.3			29.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	34.2		13.5	8.6	32.4		10.6				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	41.9		31.1	6.7	41.1		31.0				
Max Q Clear Time (g_c+I1), s	2.8	9.4		7.6	4.3	21.0		3.6				
Green Ext Time (p_c), s	0.0	2.6		1.2	0.0	5.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Intersection						
Int Delay, s/veh	0.6					
Movement	**EBL**	**EBT**	**WBT**	**WBR**	**SBL**	**SBR**
Lane Configurations						
Traffic Vol, veh/h	10	710	1130	10	10	30
Future Vol, veh/h	10	710	1130	10	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	772	1228	11	11	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1239	0	-	0	1642	620
Stage 1	-	-	-	-	1234	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	558	-	-	-	91	431
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	558	-	-	-	89	431
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	640	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	25.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	558	-	-	-	220
HCM Lane V/C Ratio	0.019	-	-	-	0.198
HCM Control Delay (s)	11.6	-	-	-	25.4
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	44

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	700	26	26	1090	10	102	0	102	20	0	50
Future Vol, veh/h	30	700	26	26	1090	10	102	0	102	20	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	761	28	28	1185	11	111	0	111	22	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1196	0	0	789	0	0	1490	2093	395	1694	2102	598
Stage 1	-	-	-	-	-	-	841	841	-	1247	1247	-
Stage 2	-	-	-	-	-	-	649	1252	-	447	855	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	579	-	-	827	-	-	~ 86	52	604	60	51	445
Stage 1	-	-	-	-	-	-	326	379	-	184	244	-
Stage 2	-	-	-	-	-	-	425	242	-	560	373	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	827	-	-	~ 70	47	604	46	46	445
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 70	47	-	46	46	-
Stage 1	-	-	-	-	-	-	307	357	-	174	236	-
Stage 2	-	-	-	-	-	-	360	234	-	431	352	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	$ 438.8	67.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	125	579	-	-	827	-	-	128
HCM Lane V/C Ratio	1.774	0.056	-	-	0.034	-	-	0.594
HCM Control Delay (s)	$ 438.8	11.6	-	-	9.5	-	-	67.8
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	17	0.2	-	-	0.1	-	-	3

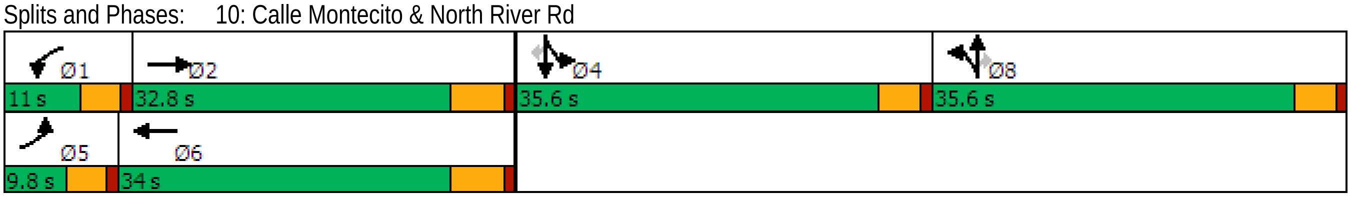
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	630	40	900	5	10	5	130
Future Volume (vph)	60	630	40	900	5	10	5	130
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.5	31.1	6.5	29.6	9.9	9.9	17.7	17.7
Actuated g/C Ratio	0.07	0.39	0.08	0.37	0.12	0.12	0.22	0.22
v/c Ratio	0.54	0.53	0.30	0.86	0.07	0.04	0.68	0.32
Control Delay	59.0	25.2	47.0	34.7	32.8	0.2	39.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	25.2	47.0	34.7	32.8	0.2	39.6	11.2
LOS	E	C	D	C	C	A	D	B
Approach Delay		28.0		35.1	19.5		29.8	
Approach LOS		C		D	B		C	

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 80.5
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 65.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	630	30	40	900	120	10	5	10	240	5	130
Future Volume (veh/h)	60	630	30	40	900	120	10	5	10	240	5	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	685	33	43	978	130	11	5	11	261	5	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	1297	62	74	1149	153	113	52	145	343	7	311
Arrive On Green	0.05	0.38	0.38	0.04	0.36	0.36	0.09	0.09	0.09	0.20	0.20	0.20
Sat Flow, veh/h	1781	3451	166	1781	3153	419	1243	565	1585	1749	34	1585
Grp Volume(v), veh/h	65	352	366	43	551	557	16	0	11	266	0	141
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1795	1808	0	1585	1783	0	1585
Q Serve(g_s), s	2.4	10.2	10.2	1.6	18.8	18.8	0.5	0.0	0.4	9.3	0.0	5.2
Cycle Q Clear(g_c), s	2.4	10.2	10.2	1.6	18.8	18.8	0.5	0.0	0.4	9.3	0.0	5.2
Prop In Lane	1.00		0.09	1.00		0.23	0.69		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	94	668	692	74	648	654	165	0	145	350	0	311
V/C Ratio(X)	0.69	0.53	0.53	0.58	0.85	0.85	0.10	0.00	0.08	0.76	0.00	0.45
Avail Cap(c_a), veh/h	144	732	759	176	765	773	853	0	747	841	0	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	16.0	16.0	31.0	19.2	19.2	27.4	0.0	27.3	25.0	0.0	23.3
Incr Delay (d2), s/veh	8.7	0.6	0.6	7.1	8.0	7.9	0.3	0.0	0.2	3.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.9	4.0	0.8	8.4	8.5	0.2	0.0	0.2	4.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	16.6	16.6	38.1	27.2	27.2	27.6	0.0	27.6	28.4	0.0	24.3
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		783			1151			27			407	
Approach Delay, s/veh		18.5			27.6			27.6			27.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	30.4		17.5	8.0	29.7		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0				
Max Q Clear Time (g_c+I1), s	3.6	12.2		11.3	4.4	20.8		2.5				
Green Ext Time (p_c), s	0.0	2.7		1.6	0.0	3.2		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			24.5
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	40	870	1000	5	0	100	0	
Future Volume (vph)	40	870	1000	5	0	100	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.5	33.4	27.5		14.1	12.9	12.9	
Actuated g/C Ratio	0.12	0.55	0.45		0.23	0.21	0.21	
v/c Ratio	0.20	0.49	0.72		0.02	0.37	0.33	
Control Delay	36.3	9.1	17.8		0.1	27.9	6.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	36.3	9.1	17.8		0.1	27.9	6.7	
LOS	D	A	B		A	C	A	
Approach Delay		10.3	17.8		0.1		15.6	
Approach LOS		B	B		A		B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 60.6
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: Redondo Dr & North River Rd

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	870	0	0	1000	60	5	0	5	100	0	140
Future Volume (veh/h)	40	870	0	0	1000	60	5	0	5	100	0	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	946	0	0	1087	65	5	0	5	109	0	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	2056	0	4	1484	89	163	34	80	401	0	247
Arrive On Green	0.05	0.58	0.00	0.00	0.44	0.44	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1781	3647	0	1781	3407	204	295	219	513	1411	0	1585
Grp Volume(v), veh/h	43	946	0	0	567	585	10	0	0	109	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1834	1027	0	0	1411	0	1585
Q Serve(g_s), s	1.1	7.1	0.0	0.0	12.2	12.2	0.0	0.0	0.0	0.0	0.0	4.1
Cycle Q Clear(g_c), s	1.1	7.1	0.0	0.0	12.2	12.2	4.2	0.0	0.0	2.7	0.0	4.1
Prop In Lane	1.00		0.00	1.00		0.11	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	82	2056	0	4	774	799	276	0	0	401	0	247
V/C Ratio(X)	0.53	0.46	0.00	0.00	0.73	0.73	0.04	0.00	0.00	0.27	0.00	0.62
Avail Cap(c_a), veh/h	289	3617	0	212	1732	1787	1008	0	0	1114	0	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	5.6	0.0	0.0	10.8	10.8	16.7	0.0	0.0	17.6	0.0	18.2
Incr Delay (d2), s/veh	5.2	0.2	0.0	0.0	1.4	1.3	0.1	0.0	0.0	0.4	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	0.0	0.0	3.9	4.1	0.1	0.0	0.0	1.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	5.8	0.0	0.0	12.2	12.2	16.7	0.0	0.0	18.0	0.0	20.7
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	C
Approach Vol, veh/h		989			1152			10			261	
Approach Delay, s/veh		6.7			12.2			16.7			19.6	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	33.5		12.8	6.6	26.9		12.8
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32
Max Q Clear Time (g_c+I1), s	0.0	9.1		6.1	3.1	14.2		6.2
Green Ext Time (p_c), s	0.0	5.4		1.1	0.0	5.9		0.0

Intersection Summary			
HCM 6th Ctrl Delay			10.7
HCM 6th LOS			B

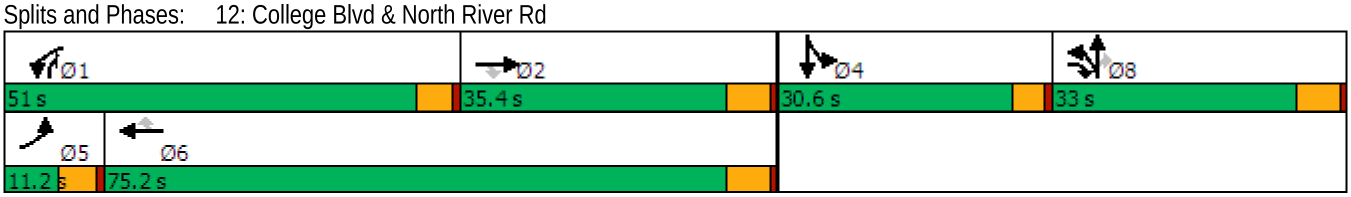
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	280	640	1340	630	80	20	1190	30	60
Future Volume (vph)	20	280	640	1340	630	80	20	1190	30	60
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.2	35.4	33.0	51.0	75.2	75.2	33.0	51.0	30.6	30.6
Total Split (%)	7.5%	23.6%	22.0%	34.0%	50.1%	50.1%	22.0%	34.0%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.0	17.0	46.0	46.6	62.5	62.5	27.6	80.1	12.0	12.0
Actuated g/C Ratio	0.05	0.14	0.38	0.38	0.51	0.51	0.23	0.66	0.10	0.10
v/c Ratio	0.25	0.62	0.91	1.11	0.38	0.10	1.03	0.61	0.19	0.42
Control Delay	69.2	56.0	35.6	98.2	21.0	4.1	99.8	6.1	54.6	56.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	56.0	35.6	98.2	21.0	4.1	99.8	6.1	54.6	56.6
LOS	E	E	D	F	C	A	F	A	D	E
Approach Delay		42.4			70.8		28.8			56.0
Approach LOS		D			E		C			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 122.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 50.6	Intersection LOS: D
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	280	640	1340	630	80	360	20	1190	30	60	10
Future Volume (veh/h)	20	280	640	1340	630	80	360	20	1190	30	60	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	304	696	1457	685	87	391	22	1293	33	65	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	799	684	1205	1964	876	349	20	1549	103	90	15
Arrive On Green	0.02	0.22	0.22	0.35	0.55	0.55	0.21	0.21	0.21	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1691	95	2790	1781	1559	264
Grp Volume(v), veh/h	22	304	696	1457	685	87	413	0	1293	33	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1786	0	1395	1781	0	1823
Q Serve(g_s), s	1.6	9.5	29.6	45.9	14.1	3.4	27.2	0.0	27.2	2.3	0.0	5.4
Cycle Q Clear(g_c), s	1.6	9.5	29.6	45.9	14.1	3.4	27.2	0.0	27.2	2.3	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	37	799	684	1205	1964	876	369	0	1549	103	0	106
V/C Ratio(X)	0.59	0.38	1.02	1.21	0.35	0.10	1.12	0.00	0.83	0.32	0.00	0.72
Avail Cap(c_a), veh/h	83	799	684	1205	1964	876	369	0	1549	352	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.9	43.2	29.7	42.9	16.3	13.9	52.2	0.0	24.3	59.5	0.0	60.9
Incr Delay (d2), s/veh	13.8	0.3	38.9	102.1	0.1	0.0	83.2	0.0	4.1	1.8	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.3	30.4	36.4	5.7	1.3	20.7	0.0	17.0	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	43.5	68.6	145.0	16.4	14.0	135.4	0.0	28.4	61.3	0.0	69.7
LnGrp LOS	E	D	F	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		1022			2229			1706			109	
Approach Delay, s/veh		61.3			100.3			54.3			67.2	
Approach LOS		E			F			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	51.0	35.4		12.2	7.9	78.5		33.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	45.9	29.6		26.0	6.1	69.4		27.2				
Max Q Clear Time (g_c+I1), s	47.9	31.6		7.4	3.6	16.1		29.2				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	3.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			76.3
HCM 6th LOS			E

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	30	30	1510	1930	90
Future Volume (vph)	60	30	30	1510	1930	90
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.6	6.3	56.9	50.6	50.6
Actuated g/C Ratio	0.16	0.24	0.09	0.81	0.72	0.72
v/c Ratio	0.23	0.09	0.11	0.57	0.83	0.09
Control Delay	27.6	17.6	34.6	7.4	20.0	7.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.6	17.6	34.6	7.5	20.0	7.0
LOS	C	B	C	A	B	A
Approach Delay	24.2			8.0	19.4	
Approach LOS	C			A	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 70.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	30	30	1510	1930	90
Future Volume (veh/h)	60	30	30	1510	1930	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	33	33	1641	2098	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	183	228	143	2618	2190	977
Arrive On Green	0.10	0.10	0.04	0.74	0.62	0.62
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	65	33	33	1641	2098	98
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	2.2	1.2	0.6	14.6	35.8	1.6
Cycle Q Clear(g_c), s	2.2	1.2	0.6	14.6	35.8	1.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	183	228	143	2618	2190	977
V/C Ratio(X)	0.36	0.14	0.23	0.63	0.96	0.10
Avail Cap(c_a), veh/h	772	752	342	2837	2204	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	24.2	30.0	4.2	11.6	5.1
Incr Delay (d2), s/veh	1.2	0.3	0.8	0.4	11.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.3	3.0	13.6	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.2	24.5	30.8	4.6	22.6	5.1
LnGrp LOS	C	C	C	A	C	A
Approach Vol, veh/h	98			1674	2196	
Approach Delay, s/veh	26.9			5.1	21.8	
Approach LOS	C			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		53.4		11.2	7.8	45.6
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		16.6		4.2	2.6	37.8
Green Ext Time (p_c), s		12.2		0.3	0.0	2.1

Intersection Summary			
HCM 6th Ctrl Delay			14.9
HCM 6th LOS			B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	200	10	90	20	50	20	1280	20	1710	240
Future Volume (vph)	200	10	90	20	50	20	1280	20	1710	240
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	62.6	10.7	63.2	63.2
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	9.2%	56.9%	9.7%	57.5%	57.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	21.2	21.2		21.2	21.2	5.1	57.5	5.7	57.7	57.7
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.05	0.62	0.06	0.62	0.62
v/c Ratio	0.78	0.30		0.44	0.13	0.23	0.46	0.20	0.85	0.26
Control Delay	53.3	12.2		36.6	3.8	53.3	11.9	51.6	21.9	8.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	2.6	0.0
Total Delay	53.3	12.2		36.6	3.8	53.3	11.9	51.6	24.5	8.2
LOS	D	B		D	A	D	B	D	C	A
Approach Delay		37.8		26.4			12.5		22.8	
Approach LOS		D		C			B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 93.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	10	110	90	20	50	20	1280	40	20	1710	240
Future Volume (veh/h)	200	10	110	90	20	50	20	1280	40	20	1710	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	11	120	98	22	54	22	1391	43	22	1859	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	40	438	319	66	472	40	2718	84	40	1898	847
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.02	0.53	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1323	135	1471	865	220	1585	1781	5089	157	1781	3554	1585
Grp Volume(v), veh/h	217	0	131	120	0	54	22	930	504	22	1859	261
Grp Sat Flow(s),veh/h/ln	1323	0	1606	1085	0	1585	1781	1702	1842	1781	1777	1585
Q Serve(g_s), s	17.5	0.0	6.7	7.4	0.0	2.7	1.3	18.8	18.8	1.3	54.9	9.9
Cycle Q Clear(g_c), s	31.6	0.0	6.7	14.1	0.0	2.7	1.3	18.8	18.8	1.3	54.9	9.9
Prop In Lane	1.00		0.92	0.82		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	288	0	479	384	0	472	40	1818	984	40	1898	847
V/C Ratio(X)	0.75	0.00	0.27	0.31	0.00	0.11	0.55	0.51	0.51	0.55	0.98	0.31
Avail Cap(c_a), veh/h	288	0	479	384	0	472	83	1818	984	93	1900	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	0.0	28.8	33.5	0.0	27.4	51.9	16.0	16.0	51.9	24.4	13.9
Incr Delay (d2), s/veh	10.7	0.0	0.3	0.5	0.0	0.1	11.3	0.2	0.4	11.3	16.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	2.6	2.7	0.0	1.0	0.7	7.1	7.8	0.7	25.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	29.1	34.0	0.0	27.5	63.3	16.3	16.5	63.3	40.4	14.1
LnGrp LOS	E	A	C	C	A	C	E	B	B	E	D	B
Approach Vol, veh/h		348			174			1456			2142	
Approach Delay, s/veh		45.4			32.0			17.1			37.4	
Approach LOS		D			C			B			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	63.1		36.7	7.5	63.1		36.7
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7
Max Green Setting (Gmax), s	5.6	56.8		* 32	5.0	57.4		* 32
Max Q Clear Time (g_c+I1), s	3.3	20.8		33.6	3.3	56.9		16.1
Green Ext Time (p_c), s	0.0	8.5		0.0	0.0	0.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

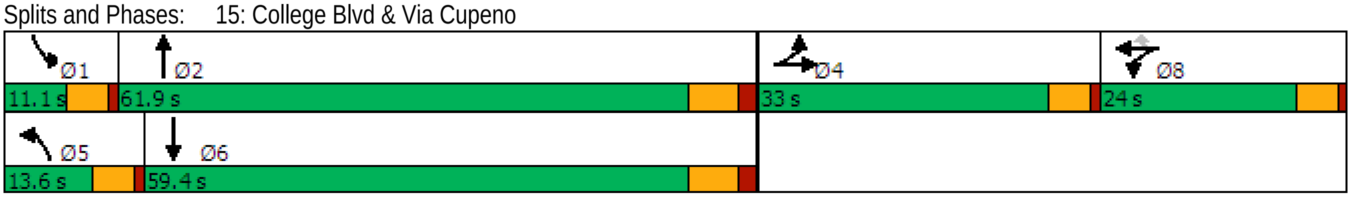
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	5	10	5	170	1280	5	1820
Future Volume (vph)	5	10	5	170	1280	5	1820
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	13.6	61.9	11.1	59.4
Total Split (%)	25.4%	18.5%	18.5%	10.5%	47.6%	8.5%	45.7%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.7	15.9	15.9	8.6	64.8	6.0	53.0
Actuated g/C Ratio	0.11	0.14	0.14	0.08	0.58	0.05	0.48
v/c Ratio	0.32	0.73	0.02	0.70	0.49	0.05	0.85
Control Delay	28.5	63.7	0.0	66.3	16.3	56.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	63.7	0.0	66.3	16.3	56.0	31.0
LOS	C	E	A	E	B	E	C
Approach Delay	28.5	62.1			22.0		31.1
Approach LOS	C	E			C		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 111.1
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 71.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 15: College Blvd & Via Cupeno



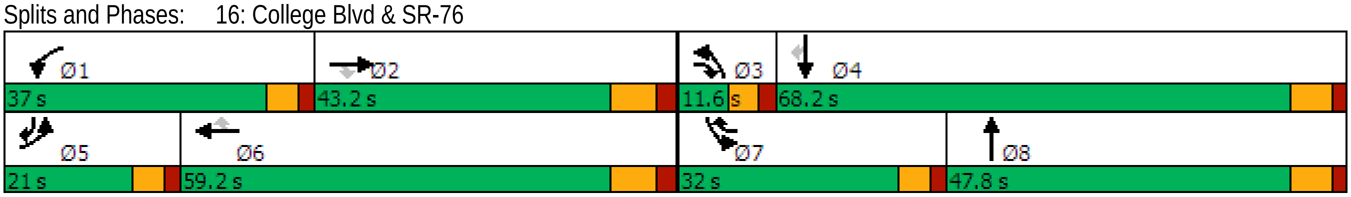
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	5	50	160	10	5	170	1280	40	5	1820	70
Future Volume (veh/h)	60	5	50	160	10	5	170	1280	40	5	1820	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	5	54	174	11	5	185	1391	43	5	1978	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	11	123	212	13	200	258	2779	86	14	2418	93
Arrive On Green	0.08	0.08	0.08	0.13	0.13	0.13	0.07	0.55	0.55	0.01	0.48	0.48
Sat Flow, veh/h	1762	137	1486	1680	106	1585	3456	5089	157	1781	5046	193
Grp Volume(v), veh/h	66	0	58	185	0	5	185	930	504	5	1333	721
Grp Sat Flow(s),veh/h/ln	1782	0	1603	1786	0	1585	1728	1702	1842	1781	1702	1836
Q Serve(g_s), s	3.2	0.0	3.2	9.3	0.0	0.3	4.8	15.8	15.8	0.3	31.0	31.1
Cycle Q Clear(g_c), s	3.2	0.0	3.2	9.3	0.0	0.3	4.8	15.8	15.8	0.3	31.0	31.1
Prop In Lane	0.99		0.93	0.94		1.00	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	148	0	133	225	0	200	258	1859	1006	14	1631	880
V/C Ratio(X)	0.44	0.00	0.44	0.82	0.00	0.03	0.72	0.50	0.50	0.36	0.82	0.82
Avail Cap(c_a), veh/h	540	0	486	368	0	326	318	2031	1099	116	1939	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	40.3	39.4	0.0	35.4	41.8	13.1	13.1	45.6	20.6	20.6
Incr Delay (d2), s/veh	2.1	0.0	2.3	7.5	0.0	0.1	5.8	0.2	0.4	14.9	2.4	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.3	4.5	0.0	0.1	2.2	5.7	6.2	0.2	12.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	0.0	42.5	46.8	0.0	35.4	47.6	13.3	13.5	60.4	23.0	25.1
LnGrp LOS	D	A	D	D	A	D	D	B	B	E	C	C
Approach Vol, veh/h		124			190			1619			2059	
Approach Delay, s/veh		42.5			46.5			17.3			23.9	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	57.2		12.7	12.0	51.1		16.6				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	55.1		28.0	8.5	52.6		19.0				
Max Q Clear Time (g_c+I1), s	2.3	17.8		5.2	6.8	33.1		11.3				
Green Ext Time (p_c), s	0.0	8.5		0.4	0.1	11.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			22.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	370	950	40	660	1640	560	60	560	650	930	440
Future Volume (vph)	370	950	40	660	1640	560	60	560	650	930	440
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	43.2	11.6	37.0	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.0%	7.3%	23.1%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	35.2	49.1	31.3	51.2	85.5	5.9	41.0	26.3	61.4	83.5
Actuated g/C Ratio	0.10	0.22	0.31	0.20	0.32	0.53	0.04	0.26	0.16	0.38	0.52
v/c Ratio	1.23	0.92	0.07	1.07	1.10	0.70	0.52	1.06	1.25	0.74	0.54
Control Delay	182.4	74.8	0.2	113.8	103.2	29.4	90.3	97.8	180.3	46.7	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	182.4	74.8	0.2	113.8	103.2	29.4	90.3	97.8	180.3	46.7	21.6
LOS	F	E	A	F	F	C	F	F	F	D	C
Approach Delay		101.9			91.2			97.3		84.2	
Approach LOS		F			F			F		F	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 92.1 Intersection LOS: F
Intersection Capacity Utilization 108.3% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	950	40	660	1640	560	60	560	320	650	930	440
Future Volume (veh/h)	370	950	40	660	1640	560	60	560	320	650	930	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	1033	43	717	1783	609	65	609	348	707	1011	478
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1123	395	676	1634	768	102	558	319	568	1390	772
Arrive On Green	0.10	0.22	0.22	0.20	0.32	0.32	0.03	0.26	0.26	0.16	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2178	1245	3456	3554	1585
Grp Volume(v), veh/h	402	1033	43	717	1783	609	65	497	460	707	1011	478
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1646	1728	1777	1585
Q Serve(g_s), s	15.3	31.7	3.3	31.3	51.2	51.2	3.0	41.0	41.0	26.3	38.7	35.5
Cycle Q Clear(g_c), s	15.3	31.7	3.3	31.3	51.2	51.2	3.0	41.0	41.0	26.3	38.7	35.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	330	1123	395	676	1634	768	102	455	422	568	1390	772
V/C Ratio(X)	1.22	0.92	0.11	1.06	1.09	0.79	0.64	1.09	1.09	1.24	0.73	0.62
Avail Cap(c_a), veh/h	330	1123	395	676	1634	768	127	455	422	568	1390	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	61.0	46.3	64.3	54.4	34.5	76.8	59.5	59.5	66.9	41.4	30.2
Incr Delay (d2), s/veh	121.9	12.0	0.1	51.8	51.5	5.7	6.9	69.0	70.6	124.4	1.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	15.0	1.4	18.7	29.7	21.0	1.4	27.2	25.4	21.4	17.5	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	194.2	73.0	46.4	116.2	105.9	40.3	83.8	128.5	130.1	191.2	43.4	31.7
LnGrp LOS	F	E	D	F	F	D	F	F	F	F	D	C
Approach Vol, veh/h		1478			3109			1022			2196	
Approach Delay, s/veh		105.2			95.4			126.4			88.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.0	43.2	10.4	69.4	21.0	59.2	32.0	47.8
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	35.2	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	33.3	33.7	5.0	40.7	17.3	53.2	28.3	43.0
Green Ext Time (p_c), s	0.0	0.9	0.0	8.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	99.4
HCM 6th LOS	F

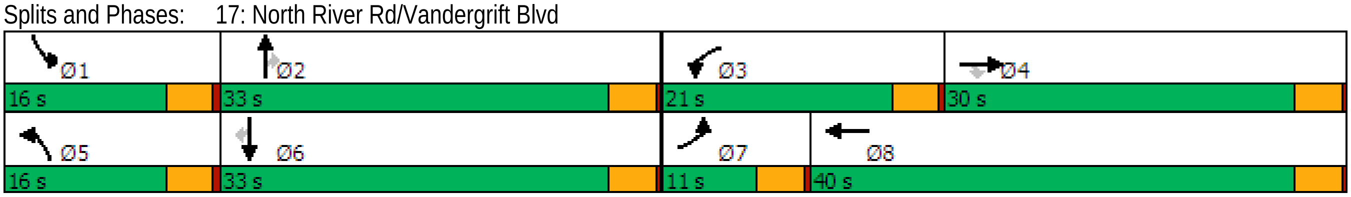
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	60	70	140	830	60	140	1000	380	130	870	50
Future Volume (vph)	60	70	140	830	60	140	1000	380	130	870	50
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.8	11.1	11.1	17.2	23.6	11.1	29.5	29.5	10.8	29.3	29.3
Actuated g/C Ratio	0.08	0.13	0.13	0.20	0.28	0.13	0.35	0.35	0.13	0.35	0.35
v/c Ratio	0.46	0.31	0.45	1.30	0.63	0.66	0.61	0.50	0.63	0.77	0.08
Control Delay	51.0	35.9	9.9	175.8	12.1	51.4	25.9	5.1	49.7	31.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	35.9	9.9	175.8	12.1	51.4	25.9	5.1	49.7	31.5	0.3
LOS	D	D	A	F	B	D	C	A	D	C	A
Approach Delay		25.7			123.5		23.0			32.3	
Approach LOS		C			F		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 84.7	
Natural Cycle: 110	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 55.8	Intersection LOS: E
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	70	140	830	60	330	140	1000	380	130	870	50
Future Volume (veh/h)	60	70	140	830	60	330	140	1000	380	130	870	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	76	152	902	65	359	152	1087	413	141	946	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	265	224	713	75	414	188	1832	569	176	1251	558
Arrive On Green	0.05	0.14	0.14	0.21	0.30	0.30	0.11	0.36	0.36	0.10	0.35	0.35
Sat Flow, veh/h	1781	1870	1585	3456	249	1374	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	65	76	152	902	0	424	152	1087	413	141	946	54
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1623	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.0	3.0	7.5	17.0	0.0	20.4	6.9	14.3	18.6	6.4	19.4	1.9
Cycle Q Clear(g_c), s	3.0	3.0	7.5	17.0	0.0	20.4	6.9	14.3	18.6	6.4	19.4	1.9
Prop In Lane	1.00		1.00	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	84	265	224	713	0	488	188	1832	569	176	1251	558
V/C Ratio(X)	0.78	0.29	0.68	1.26	0.00	0.87	0.81	0.59	0.73	0.80	0.76	0.10
Avail Cap(c_a), veh/h	151	591	500	713	0	710	260	1832	569	260	1251	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	31.6	33.6	32.7	0.0	27.2	36.0	21.5	22.9	36.3	23.6	17.9
Incr Delay (d2), s/veh	14.2	0.6	3.6	130.0	0.0	7.9	12.3	1.4	7.9	10.4	4.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	3.0	19.7	0.0	8.6	3.6	5.7	7.8	3.2	8.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	32.2	37.1	162.7	0.0	35.1	48.3	22.9	30.8	46.7	27.8	18.2
LnGrp LOS	D	C	D	F	A	D	D	C	C	D	C	B
Approach Vol, veh/h		293			1326			1652			1141	
Approach Delay, s/veh		39.4			121.9			27.2			29.7	
Approach LOS		D			F			C			C	

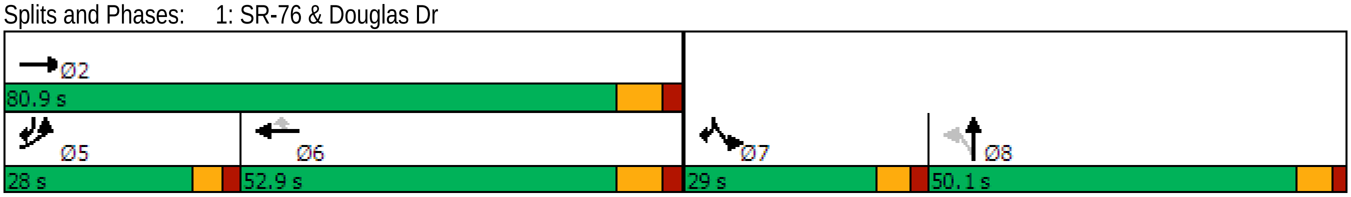
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	33.6	21.0	15.7	12.7	33.0	7.9	28.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	8.4	20.6	19.0	9.5	8.9	21.4	5.0	22.4
Green Ext Time (p_c), s	0.1	5.4	0.0	0.8	0.1	3.9	0.0	2.4

Intersection Summary		
HCM 6th Ctrl Delay		57.1
HCM 6th LOS		E

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	620	2040	1340	300	330	440	
Future Volume (vph)	620	2040	1340	300	330	440	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	80.9	52.9	52.9	29.0		50.1
Total Split (%)	17.5%	50.6%	33.1%	33.1%	18.1%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	72.9	44.9	44.9	22.9	51.3	
Actuated g/C Ratio	0.20	0.66	0.41	0.41	0.21	0.47	
v/c Ratio	0.97	0.94	1.01	0.39	0.98	0.31	
Control Delay	71.3	26.9	58.7	3.8	85.4	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	71.3	26.9	58.7	3.8	85.4	2.4	
LOS	E	C	E	A	F	A	
Approach Delay		37.2	48.6				
Approach LOS		D	D				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	620	2040	0	0	1340	300	0	0	0	330	0	440
Future Volume (veh/h)	620	2040	0	0	1340	300	0	0	0	330	0	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	674	2217	0	0	1457	326	0	0	0	359	0	478
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	701	2357	0	0	1452	648	0	2	0	371	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.21	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	359	
Grp Volume(v), veh/h	674	2217	0	0	1457	326	0	0	0	359	81.1	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	21.2	61.4	0.0	0.0	44.9	16.8	0.0	0.0	0.0	22.0		
Cycle Q Clear(g_c), s	21.2	61.4	0.0	0.0	44.9	16.8	0.0	0.0	0.0	22.0		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	701	2357	0	0	1452	648	0	2	0	371		
V/C Ratio(X)	0.96	0.94	0.00	0.00	1.00	0.50	0.00	0.00	0.00	0.97		
Avail Cap(c_a), veh/h	701	2357	0	0	1452	648	0	749	0	371		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	43.4	16.6	0.0	0.0	32.5	24.2	0.0	0.0	0.0	43.1		
Incr Delay (d2), s/veh	24.7	8.3	0.0	0.0	24.5	0.6	0.0	0.0	0.0	38.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.4	24.5	0.0	0.0	23.5	6.3	0.0	0.0	0.0	13.5		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.1	24.9	0.0	0.0	57.0	24.8	0.0	0.0	0.0	81.1		
LnGrp LOS	E	C	A	A	F	C	A	A	A	F		
Approach Vol, veh/h		2891			1783			0				
Approach Delay, s/veh		35.0			51.1			0.0				
Approach LOS		C			D							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		80.9			28.0	52.9	29.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		72.9			* 22	44.9	22.9	44.0				
Max Q Clear Time (g_c+I1), s		63.4			23.2	46.9	24.0	0.0				
Green Ext Time (p_c), s		7.7			0.0	0.0	0.0	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

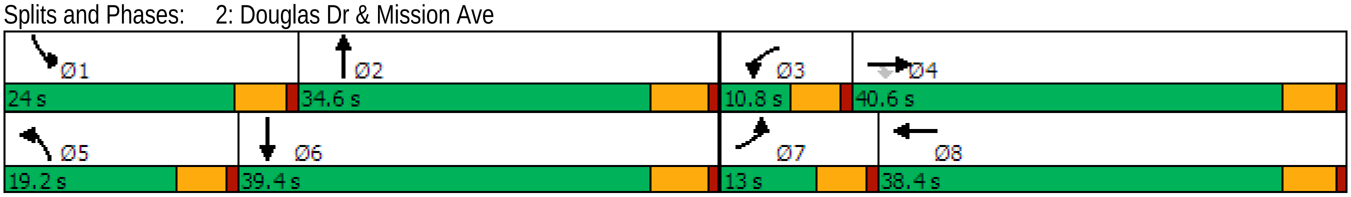
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	270	740	170	70	410	190	700	350	580
Future Volume (vph)	270	740	170	70	410	190	700	350	580
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.0	40.6	40.6	10.8	38.4	19.2	34.6	24.0	39.4
Total Split (%)	11.8%	36.9%	36.9%	9.8%	34.9%	17.5%	31.5%	21.8%	35.8%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.0	30.0	30.0	5.7	27.8	14.0	26.5	19.0	31.5
Actuated g/C Ratio	0.08	0.29	0.29	0.06	0.27	0.14	0.26	0.18	0.31
v/c Ratio	1.11	0.78	0.33	0.78	0.86	0.86	0.87	1.16	0.65
Control Delay	131.9	39.4	10.1	95.5	35.1	77.2	48.6	140.5	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.9	39.4	10.1	95.5	35.1	77.2	48.6	140.5	34.2
LOS	F	D	B	F	D	E	D	F	C
Approach Delay		56.3			39.7		54.5		71.8
Approach LOS		E			D		D		E

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 102.9
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 55.9 Intersection LOS: E
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	740	170	70	410	430	190	700	30	350	580	60
Future Volume (veh/h)	270	740	170	70	410	430	190	700	30	350	580	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	804	185	76	446	467	207	761	33	380	630	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1165	519	95	546	487	234	846	37	313	939	97
Arrive On Green	0.07	0.33	0.33	0.05	0.31	0.31	0.13	0.24	0.24	0.18	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3470	150	1781	3252	335
Grp Volume(v), veh/h	293	804	185	76	446	467	207	390	404	380	344	351
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1843	1781	1777	1810
Q Serve(g_s), s	7.9	21.1	9.5	4.5	24.9	31.1	12.3	22.8	22.8	18.9	18.3	18.4
Cycle Q Clear(g_c), s	7.9	21.1	9.5	4.5	24.9	31.1	12.3	22.8	22.8	18.9	18.3	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.19
Lane Grp Cap(c), veh/h	254	1165	519	95	546	487	234	433	450	313	513	522
V/C Ratio(X)	1.15	0.69	0.36	0.80	0.82	0.96	0.89	0.90	0.90	1.21	0.67	0.67
Avail Cap(c_a), veh/h	254	1165	519	95	546	487	234	476	494	313	556	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	31.4	27.5	50.3	34.4	36.5	45.9	39.3	39.3	44.3	33.7	33.7
Incr Delay (d2), s/veh	104.0	1.8	0.4	37.8	9.4	30.5	30.6	18.7	18.2	121.3	2.8	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	9.2	3.7	3.0	12.0	15.9	7.4	12.1	12.5	18.8	8.2	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	153.8	33.1	27.9	88.1	43.8	67.0	76.4	58.0	57.5	165.6	36.5	36.5
LnGrp LOS	F	C	C	F	D	E	E	E	E	F	D	D
Approach Vol, veh/h		1282			989			1001			1075	
Approach Delay, s/veh		59.9			58.2			61.6			82.1	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	32.0	10.8	40.6	19.2	36.8	13.0	38.4
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	18.9	28.8	5.7	35.2	14.1	33.6	7.9	33.0
Max Q Clear Time (g_c+I1), s	20.9	24.8	6.5	23.1	14.3	20.4	9.9	33.1
Green Ext Time (p_c), s	0.0	1.4	0.0	3.9	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.4
HCM 6th LOS	E

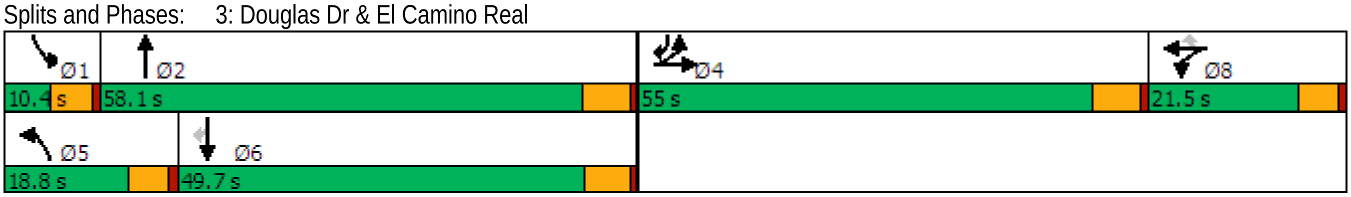
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1160	70	80	30	10	100	1170	10	830	720
Future Volume (vph)	1160	70	80	30	10	100	1170	10	830	720
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	55.0	55.0		21.5	21.5	18.8	58.1	10.4	49.7	55.0
Total Split (%)	37.9%	37.9%		14.8%	14.8%	13.0%	40.1%	7.2%	34.3%	37.9%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	49.0	49.0	137.4	12.4	12.4	12.0	54.1	5.0	40.8	95.8
Actuated g/C Ratio	0.36	0.36	1.00	0.09	0.09	0.09	0.39	0.04	0.30	0.70
v/c Ratio	1.03	0.11	0.05	0.60	0.04	0.70	0.97	0.17	0.86	0.40
Control Delay	77.4	32.2	0.1	76.7	0.3	85.9	59.4	73.5	55.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	32.2	0.1	76.7	0.3	85.9	59.4	73.5	55.3	9.9
LOS	E	C	A	E	A	F	E	E	E	A
Approach Delay		70.3		69.0			61.4		34.5	
Approach LOS		E		E			E		C	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 137.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 54.5	Intersection LOS: D
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1160	70	80	60	30	10	100	1170	70	10	830	720
Future Volume (veh/h)	1160	70	80	60	30	10	100	1170	70	10	830	720
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1261	76	0	65	33	11	109	1272	76	11	902	783
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1255	679		82	42	108	133	1304	78	22	1139	1908
Arrive On Green	0.36	0.36	0.00	0.07	0.07	0.07	0.07	0.64	0.38	0.01	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	1201	610	1585	1781	3407	203	1781	3554	2790
Grp Volume(v), veh/h	1261	76	0	98	0	11	109	662	686	11	902	783
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1834	1781	1777	1395
Q Serve(g_s), s	48.8	3.6	0.0	7.2	0.0	0.9	8.1	47.9	48.5	0.8	31.1	16.6
Cycle Q Clear(g_c), s	48.8	3.6	0.0	7.2	0.0	0.9	8.1	47.9	48.5	0.8	31.1	16.6
Prop In Lane	1.00		1.00	0.66		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	1255	679		124	0	108	133	680	702	22	1139	1908
V/C Ratio(X)	1.00	0.11		0.79	0.00	0.10	0.82	0.97	0.98	0.49	0.79	0.41
Avail Cap(c_a), veh/h	1255	679		216	0	189	178	686	708	66	1156	1920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	28.4	0.0	61.7	0.0	58.7	61.3	23.6	25.6	65.9	41.6	9.3
Incr Delay (d2), s/veh	26.6	0.1	0.0	10.8	0.0	0.4	19.7	27.8	28.0	15.8	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.2	1.7	0.0	3.7	0.0	0.4	4.4	20.4	22.3	0.5	14.2	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	28.5	0.0	72.5	0.0	59.1	81.0	51.4	53.5	81.8	45.3	9.5
LnGrp LOS	F	C		E	A	E	F	D	D	F	D	A
Approach Vol, veh/h		1337	A		109			1457			1696	
Approach Delay, s/veh		67.0			71.1			54.6			29.0	
Approach LOS		E			E			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	57.6		55.0	15.4	49.3		14.7				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	51.9		48.8	13.4	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.8	50.5		50.8	10.1	33.1		9.2				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.1	6.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			49.2									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

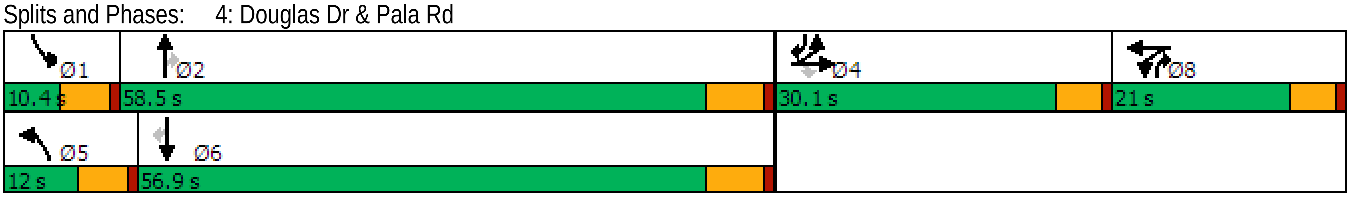
LOS Engineering, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	5	110	20	5	110	2110	30	20	1420	120
Future Volume (vph)	110	5	110	20	5	110	2110	30	20	1420	120
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	12.0	58.5	21.0	10.4	56.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.0%	48.8%	17.5%	8.7%	47.4%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	6.9	6.9	6.7	59.7	68.4	5.1	51.3	68.6
Actuated g/C Ratio	0.12	0.12	0.12	0.07	0.07	0.07	0.63	0.72	0.05	0.54	0.72
v/c Ratio	0.33	0.31	0.41	0.17	0.26	0.97	1.04	0.03	0.24	0.81	0.11
Control Delay	43.6	43.1	10.8	48.2	23.1	122.1	50.7	0.3	53.9	24.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	43.1	10.8	48.2	23.1	122.1	50.7	0.3	53.9	24.6	1.1
LOS	D	D	B	D	C	F	D	A	D	C	A
Approach Delay		27.4			32.3		53.6			23.1	
Approach LOS		C			C		D			C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 95.4
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 40.2 — Intersection LOS: D
Intersection Capacity Utilization 86.3% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	5	110	20	5	30	110	2110	30	20	1420	120
Future Volume (veh/h)	110	5	110	20	5	30	110	2110	30	20	1420	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	0	120	22	5	33	120	2293	33	22	1543	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	0	167	92	11	73	130	2056	999	42	1880	1005
Arrive On Green	0.11	0.00	0.11	0.05	0.05	0.05	0.07	0.97	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	124	0	120	22	0	38	120	2293	33	22	1543	130
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	32.7	3.0
Cycle Q Clear(g_c), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	32.7	3.0
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	0	167	92	0	84	130	2056	999	42	1880	1005
V/C Ratio(X)	0.33	0.00	0.72	0.24	0.00	0.45	0.92	1.12	0.03	0.53	0.82	0.13
Avail Cap(c_a), veh/h	985	0	438	313	0	284	130	2056	999	99	1993	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	39.1	41.2	0.0	41.6	41.7	1.5	6.3	43.7	17.7	6.6
Incr Delay (d2), s/veh	0.5	0.0	5.7	1.3	0.0	3.8	55.8	59.4	0.0	9.9	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	2.8	0.5	0.0	0.9	4.6	17.6	0.3	0.6	12.9	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	44.8	42.5	0.0	45.5	97.5	60.9	6.3	53.5	20.5	6.6
LnGrp LOS	D	A	D	D	A	D	F	F	A	D	C	A
Approach Vol, veh/h		244			60			2446			1695	
Approach Delay, s/veh		41.4			44.4			62.0			19.8	
Approach LOS		D			D			E			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	58.5		14.6	12.0	54.0		9.8				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	5.0	52.3		25.0	6.6	50.7		15.9				
Max Q Clear Time (g_c+I1), s	3.1	54.3		8.6	8.1	34.7		4.1				
Green Ext Time (p_c), s	0.0	0.0		0.9	0.0	8.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			44.5									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	10	5	80	50	5	5	2030	90	5	1360	80
Future Volume (vph)	10	5	80	50	5	5	2030	90	5	1360	80
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	83.0	83.0	10.4	93.4	93.4
Total Split (%)	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	63.8%	63.8%	8.0%	71.8%	71.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.5	12.5		12.5	12.5	84.1	84.1	5.1	85.8	85.8
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.79	0.79	0.05	0.81	0.81
v/c Ratio		0.09	0.34		0.37	0.02	0.79	0.08	0.06	0.52	0.07
Control Delay		40.3	15.3		47.9	0.2	13.4	3.3	54.6	6.3	3.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		40.3	15.3		47.9	0.2	13.4	3.3	54.6	6.3	3.3
LOS		D	B		D	A	B	A	D	A	A
Approach Delay		19.2			44.2		12.9			6.3	
Approach LOS		B			D		B			A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 106	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	80	50	5	5	0	2030	90	5	1360	80
Future Volume (veh/h)	10	5	80	50	5	5	0	2030	90	5	1360	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	87	54	5	5	0	2207	98	5	1478	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	55	17	397	69	4	397	0	2166	966	11	2342	1045
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.61	0.61	0.01	0.66	0.66
Sat Flow, veh/h	27	66	1585	57	16	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	16	0	87	59	0	5	0	2207	98	5	1478	87
Grp Sat Flow(s),veh/h/ln	93	0	1585	74	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.3	0.0	5.4	1.5	0.0	0.3	0.0	76.3	3.2	0.3	30.4	2.5
Cycle Q Clear(g_c), s	30.9	0.0	5.4	31.4	0.0	0.3	0.0	76.3	3.2	0.3	30.4	2.5
Prop In Lane	0.69		1.00	0.92		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	397	74	0	397	0	2166	966	11	2342	1045
V/C Ratio(X)	0.22	0.00	0.22	0.80	0.00	0.01	0.00	1.02	0.10	0.45	0.63	0.08
Avail Cap(c_a), veh/h	80	0	405	80	0	405	0	2167	967	71	2463	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	37.2	60.9	0.0	35.2	0.0	24.4	10.2	61.9	12.4	7.7
Incr Delay (d2), s/veh	1.5	0.0	0.3	39.9	0.0	0.0	0.0	24.2	0.0	25.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.2	2.7	0.0	0.1	0.0	36.9	1.1	0.2	11.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.0	37.4	100.8	0.0	35.3	0.0	48.6	10.2	87.3	12.9	7.7
LnGrp LOS	D	A	D	F	A	D	A	F	B	F	B	A
Approach Vol, veh/h		103			64			2305			1570	
Approach Delay, s/veh		37.9			95.6			47.0			12.9	
Approach LOS		D			F			D			B	

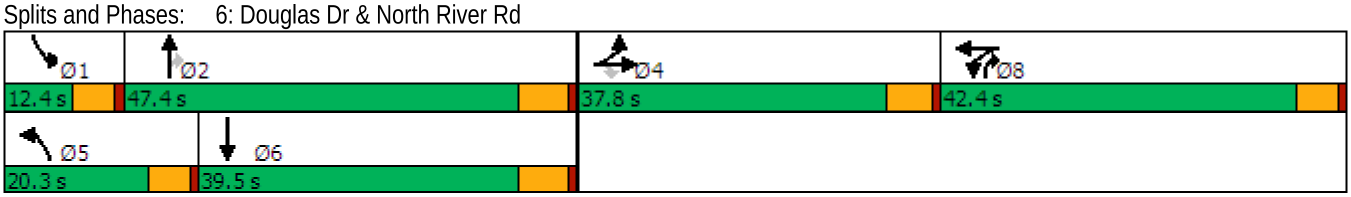
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	83.0		36.3		89.2		36.3				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	76.3		32.0		86.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	78.3		32.9		32.4		33.4				
Green Ext Time (p_c), s	0.0	0.0		0.0		11.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			34.3
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	110	80	650	70	170	770	990	40	660
Future Volume (vph)	40	110	80	650	70	170	770	990	40	660
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.3	47.4	42.4	12.4	39.5
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.5%	33.9%	30.3%	8.9%	28.2%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.6	13.6	13.6	36.0	36.0	15.0	43.2	81.3	6.7	32.4
Actuated g/C Ratio	0.11	0.11	0.11	0.30	0.30	0.12	0.36	0.68	0.06	0.27
v/c Ratio	0.21	0.30	0.28	0.73	0.50	0.84	0.66	0.49	0.44	0.81
Control Delay	50.3	50.3	2.2	49.2	37.2	82.9	37.5	1.8	72.4	49.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	50.3	2.2	49.2	37.2	82.9	37.5	1.8	72.4	49.4
LOS	D	D	A	D	D	F	D	A	E	D
Approach Delay		33.6			42.2		23.2			50.6
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 120.1	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 33.4	Intersection LOS: C
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	110	80	650	70	50	170	770	990	40	660	50
Future Volume (veh/h)	40	110	80	650	70	50	170	770	990	40	660	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	120	87	707	76	54	185	837	1076	43	717	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	315	141	923	264	187	219	1378	1804	62	1004	76
Arrive On Green	0.09	0.09	0.09	0.26	0.26	0.26	0.12	0.39	0.39	0.03	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	3563	1017	723	1781	3554	2790	1781	3350	252
Grp Volume(v), veh/h	43	120	87	707	0	130	185	837	1076	43	380	391
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1740	1781	1777	1395	1781	1777	1825
Q Serve(g_s), s	2.2	3.2	5.3	18.2	0.0	5.9	10.1	18.7	22.0	2.4	18.9	19.0
Cycle Q Clear(g_c), s	2.2	3.2	5.3	18.2	0.0	5.9	10.1	18.7	22.0	2.4	18.9	19.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	158	315	141	923	0	451	219	1378	1804	62	533	547
V/C Ratio(X)	0.27	0.38	0.62	0.77	0.00	0.29	0.85	0.61	0.60	0.69	0.71	0.71
Avail Cap(c_a), veh/h	574	1145	511	1327	0	648	267	1474	1880	126	596	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	42.7	43.6	34.0	0.0	29.5	42.6	24.4	10.1	47.4	31.0	31.0
Incr Delay (d2), s/veh	1.3	1.1	6.2	2.2	0.0	0.5	18.5	1.1	0.8	12.7	4.9	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.4	2.3	8.0	0.0	2.5	5.5	7.9	12.5	1.3	8.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	43.8	49.8	36.2	0.0	30.0	61.1	25.4	10.9	60.1	35.9	35.8
LnGrp LOS	D	D	D	D	A	C	E	C	B	E	D	D
Approach Vol, veh/h		250			837			2098			814	
Approach Delay, s/veh		45.8			35.2			21.1			37.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	44.7		14.6	17.6	36.0		31.1				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	7.0	41.2		32.0	14.9	33.3		37.0				
Max Q Clear Time (g_c+I1), s	4.4	24.0		7.3	12.1	21.0		20.2				
Green Ext Time (p_c), s	0.0	14.5		1.6	0.2	5.2		5.5				

Intersection Summary			
HCM 6th Ctrl Delay			28.9
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	140	1080	30	750	5	5	40	100	5	90
Future Volume (vph)	140	1080	30	750	5	5	40	100	5	90
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	51.0	12.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	51.0%	12.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	37.4	6.8	24.3		13.3	13.3		13.3	13.3
Actuated g/C Ratio	0.17	0.57	0.10	0.37		0.20	0.20		0.20	0.20
v/c Ratio	0.50	0.59	0.18	0.72		0.03	0.10		0.42	0.23
Control Delay	34.8	13.4	37.3	22.3		23.2	0.5		29.4	2.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	34.8	13.4	37.3	22.3		23.2	0.5		29.4	2.9
LOS	C	B	D	C		C	A		C	A
Approach Delay		15.8		22.8		4.7			17.1	
Approach LOS		B		C		A			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 65.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

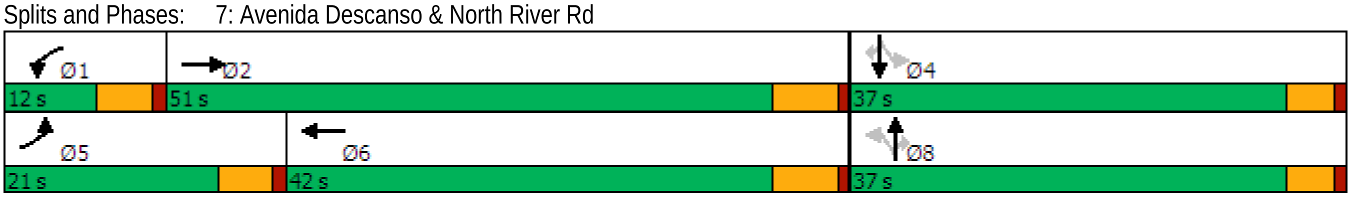
Maximum v/c Ratio: 0.72

Intersection Signal Delay: 18.4 Intersection LOS: B

Intersection Capacity Utilization 59.7% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1080	10	30	750	110	5	5	40	100	5	90
Future Volume (veh/h)	140	1080	10	30	750	110	5	5	40	100	5	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1174	11	33	815	120	5	5	43	109	5	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1397	13	57	970	143	66	46	623	88	2	623
Arrive On Green	0.11	0.39	0.39	0.03	0.31	0.31	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3607	34	1781	3107	458	2	117	1585	7	6	1585
Grp Volume(v), veh/h	152	578	607	33	466	469	10	0	43	114	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1788	119	0	1585	13	0	1585
Q Serve(g_s), s	6.9	24.4	24.4	1.5	20.2	20.2	0.1	0.0	1.4	0.2	0.0	3.3
Cycle Q Clear(g_c), s	6.9	24.4	24.4	1.5	20.2	20.2	32.4	0.0	1.4	32.4	0.0	3.3
Prop In Lane	1.00		0.02	1.00		0.26	0.50		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	191	688	722	57	555	558	112	0	623	91	0	623
V/C Ratio(X)	0.80	0.84	0.84	0.58	0.84	0.84	0.09	0.00	0.07	1.26	0.00	0.16
Avail Cap(c_a), veh/h	344	974	1022	149	780	785	113	0	623	91	0	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	22.9	23.0	39.3	26.4	26.4	20.9	0.0	15.6	40.5	0.0	16.2
Incr Delay (d2), s/veh	7.4	4.7	4.5	8.9	5.8	5.8	0.3	0.0	0.0	179.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.5	10.9	0.8	9.0	9.1	0.1	0.0	0.5	6.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	27.6	27.4	48.3	32.2	32.2	21.2	0.0	15.7	219.7	0.0	16.3
LnGrp LOS	D	C	C	D	C	C	C	A	B	F	A	B
Approach Vol, veh/h		1337			968			53			212	
Approach Delay, s/veh		29.3			32.8			16.7			125.7	
Approach LOS		C			C			B			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	37.8		37.0	13.9	31.6		37.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	6.9	45.2		32.4	15.9	36.2		32.4
Max Q Clear Time (g_c+I1), s	3.5	26.4		34.4	8.9	22.2		34.4
Green Ext Time (p_c), s	0.0	5.4		0.0	0.3	3.7		0.0

Intersection Summary			
HCM 6th Ctrl Delay			38.3
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	1210	860	20	5	20
Future Vol, veh/h	30	1210	860	20	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	1315	935	22	5	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	957	0	-	0	1670	479
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	724	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	714	-	-	-	87	533
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	441	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	714	-	-	-	83	533
Mov Cap-2 Maneuver	-	-	-	-	83	-
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	441	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	714	-	-	-	256
HCM Lane V/C Ratio	0.046	-	-	-	0.106
HCM Control Delay (s)	10.3	-	-	-	20.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	40.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1180	112	112	860	10	48	0	48	20	0	10
Future Vol, veh/h	30	1180	112	112	860	10	48	0	48	20	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1283	122	122	935	11	52	0	52	22	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	946	0	0	1405	0	0	2122	2600	703	1893	2656	473
Stage 1	-	-	-	-	-	-	1410	1410	-	1185	1185	-
Stage 2	-	-	-	-	-	-	712	1190	-	708	1471	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	721	-	-	482	-	-	~ 28	24	380	43	22	538
Stage 1	-	-	-	-	-	-	145	203	-	201	261	-
Stage 2	-	-	-	-	-	-	389	259	-	392	190	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	721	-	-	482	-	-	~ 21	17	380	29	16	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 21	17	-	29	16	-
Stage 1	-	-	-	-	-	-	138	194	-	192	195	-
Stage 2	-	-	-	-	-	-	285	193	-	323	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	$ 943.4	220.6
HCM LOS			F	F

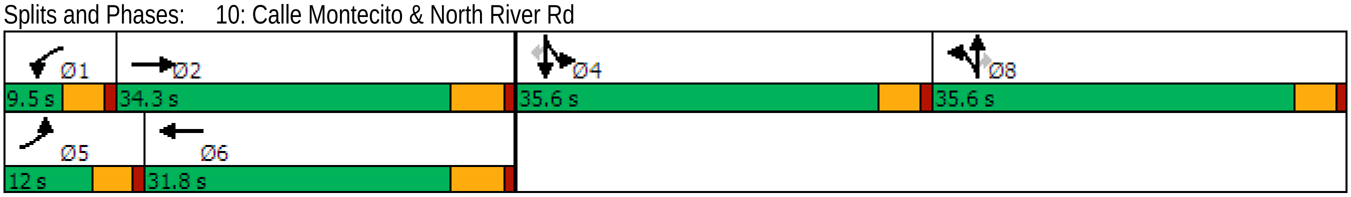
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	40	721	-	-	482	-	-	42
HCM Lane V/C Ratio	2.609	0.045	-	-	0.253	-	-	0.776
HCM Control Delay (s)	$ 943.4	10.2	-	-	15	-	-	220.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	11.5	0.1	-	-	1	-	-	3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	160	990	10	770	5	40	5	70
Future Volume (vph)	160	990	10	770	5	40	5	70
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.2	5.2	27.1	10.4	10.4	15.0	15.0
Actuated g/C Ratio	0.10	0.48	0.06	0.34	0.13	0.13	0.19	0.19
v/c Ratio	1.02	0.65	0.10	0.93	0.17	0.14	0.57	0.20
Control Delay	114.8	22.6	45.1	41.4	32.9	1.0	37.5	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.8	22.6	45.1	41.4	32.9	1.0	37.5	3.4
LOS	F	C	D	D	C	A	D	A
Approach Delay		35.4		41.5	16.0		27.8	
Approach LOS		D		D	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.4	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 66.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	990	10	10	770	230	30	5	40	170	5	70
Future Volume (veh/h)	160	990	10	10	770	230	30	5	40	170	5	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1076	11	11	837	250	33	5	43	185	5	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	1639	17	25	959	286	141	21	144	256	7	234
Arrive On Green	0.11	0.45	0.45	0.01	0.36	0.36	0.09	0.09	0.09	0.15	0.15	0.15
Sat Flow, veh/h	1781	3604	37	1781	2697	805	1557	236	1585	1737	47	1585
Grp Volume(v), veh/h	174	531	556	11	551	536	38	0	43	190	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1725	1793	0	1585	1784	0	1585
Q Serve(g_s), s	6.4	15.4	15.4	0.4	19.2	19.2	1.3	0.0	1.7	6.7	0.0	2.8
Cycle Q Clear(g_c), s	6.4	15.4	15.4	0.4	19.2	19.2	1.3	0.0	1.7	6.7	0.0	2.8
Prop In Lane	1.00		0.02	1.00		0.47	0.87		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	202	808	848	25	631	613	163	0	144	263	0	234
V/C Ratio(X)	0.86	0.66	0.66	0.45	0.87	0.87	0.23	0.00	0.30	0.72	0.00	0.33
Avail Cap(c_a), veh/h	202	808	848	135	701	681	840	0	742	835	0	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	14.0	14.0	32.4	19.9	19.9	28.0	0.0	28.1	26.9	0.0	25.3
Incr Delay (d2), s/veh	29.5	1.9	1.8	12.1	10.9	11.3	0.7	0.0	1.2	3.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.8	6.1	0.3	9.1	8.9	0.6	0.0	0.7	3.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	16.0	15.9	44.5	30.9	31.2	28.7	0.0	29.3	30.7	0.0	26.1
LnGrp LOS	E	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1261			1098			81			266	
Approach Delay, s/veh		21.8			31.2			29.0			29.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	35.8		14.4	12.0	29.2		10.6
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0
Max Q Clear Time (g_c+I1), s	2.4	17.4		8.7	8.4	21.2		3.7
Green Ext Time (p_c), s	0.0	3.9		1.0	0.0	2.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	130	1080	930	60	0		
Future Volume (vph)	130	1080	930	60	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	19.0	54.9	45.4	35.6	35.6	9.5	35.6
Total Split (%)	19.0%	54.9%	45.4%	35.6%	35.6%	10%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	11.0	43.5	27.7	11.4	11.4		
Actuated g/C Ratio	0.16	0.64	0.41	0.17	0.17		
v/c Ratio	0.49	0.52	0.77	0.28	0.23		
Control Delay	36.6	8.5	22.6	29.4	1.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	36.6	8.5	22.6	29.4	1.1		
LOS	D	A	C	C	A		
Approach Delay		11.5	22.6		11.7		
Approach LOS		B	C		B		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 68	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1080	0	0	930	80	0	0	0	60	0	100
Future Volume (veh/h)	130	1080	0	0	930	80	0	0	0	60	0	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	1174	0	0	1011	87	0	0	0	65	0	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	2180	0	4	1366	118	0	237	0	378	0	201
Arrive On Green	0.11	0.61	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.13	0.00	0.13
Sat Flow, veh/h	1781	3647	0	1781	3311	285	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	141	1174	0	0	542	556	0	0	0	65	0	109
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1819	0	1870	0	1781	0	1585
Q Serve(g_s), s	3.6	9.0	0.0	0.0	12.2	12.2	0.0	0.0	0.0	1.6	0.0	3.1
Cycle Q Clear(g_c), s	3.6	9.0	0.0	0.0	12.2	12.2	0.0	0.0	0.0	1.6	0.0	3.1
Prop In Lane	1.00		0.00	1.00		0.16	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	2180	0	4	733	751	0	237	0	378	0	201
V/C Ratio(X)	0.75	0.54	0.00	0.00	0.74	0.74	0.00	0.00	0.00	0.17	0.00	0.54
Avail Cap(c_a), veh/h	546	3619	0	188	1453	1487	0	1225	0	1281	0	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	5.3	0.0	0.0	11.8	11.8	0.0	0.0	0.0	18.7	0.0	19.4
Incr Delay (d2), s/veh	5.9	0.2	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.0	0.0	0.0	4.1	4.2	0.0	0.0	0.0	0.6	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	5.5	0.0	0.0	13.2	13.2	0.0	0.0	0.0	18.9	0.0	21.6
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	C
Approach Vol, veh/h		1315			1098			0			174	
Approach Delay, s/veh		7.7			13.2			0.0			20.6	
Approach LOS		A			B						C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	35.7		11.6	9.5	26.2		11.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	5.0	48.2		30.0	14.5	38.7		* 31				
Max Q Clear Time (g_c+I1), s	0.0	11.0		5.1	5.6	14.2		0.0				
Green Ext Time (p_c), s	0.0	7.3		0.7	0.3	5.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		10.9
HCM 6th LOS		B

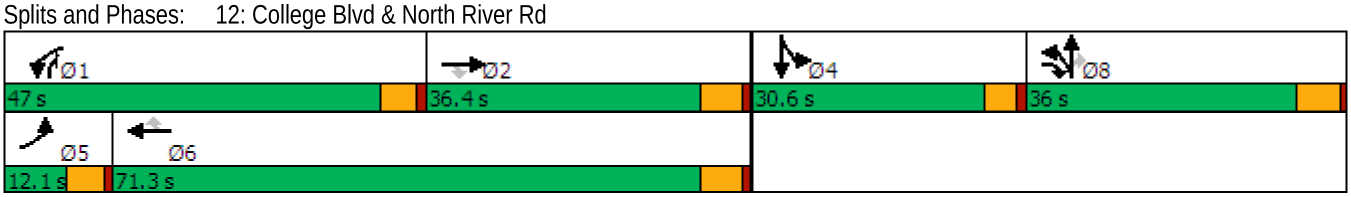
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	550	520	1270	470	70	40	1450	30	50
Future Volume (vph)	30	550	520	1270	470	70	40	1450	30	50
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	12.1	36.4	36.0	47.0	71.3	71.3	36.0	47.0	30.6	30.6
Total Split (%)	8.1%	24.3%	24.0%	31.3%	47.5%	47.5%	24.0%	31.3%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	26.2	58.1	42.4	66.9	66.9	30.6	78.8	11.5	11.5
Actuated g/C Ratio	0.05	0.20	0.45	0.33	0.52	0.52	0.24	0.61	0.09	0.09
v/c Ratio	0.37	0.84	0.64	1.23	0.28	0.09	1.30	0.80	0.21	0.36
Control Delay	75.7	61.8	11.3	149.4	20.5	3.3	189.7	15.3	58.8	59.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	61.8	11.3	149.4	20.5	3.3	189.7	15.3	58.8	59.8
LOS	E	E	B	F	C	A	F	B	E	E
Approach Delay		38.4			110.3		60.0			59.4
Approach LOS		D			F		E			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 129.7	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 73.6	Intersection LOS: E
Intersection Capacity Utilization 99.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	550	520	1270	470	70	460	40	1450	30	50	5
Future Volume (veh/h)	30	550	520	1270	470	70	460	40	1450	30	50	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	598	565	1380	511	76	500	43	1576	33	54	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	835	740	1112	1884	840	382	33	1545	85	80	7
Arrive On Green	0.03	0.24	0.24	0.32	0.53	0.53	0.23	0.23	0.23	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1646	142	2790	1781	1686	156
Grp Volume(v), veh/h	33	598	565	1380	511	76	543	0	1576	33	0	59
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1788	0	1395	1781	0	1842
Q Serve(g_s), s	2.4	20.1	30.6	41.9	10.3	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Cycle Q Clear(g_c), s	2.4	20.1	30.6	41.9	10.3	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	48	835	740	1112	1884	840	415	0	1545	85	0	87
V/C Ratio(X)	0.69	0.72	0.76	1.24	0.27	0.09	1.31	0.00	1.02	0.39	0.00	0.67
Avail Cap(c_a), veh/h	96	835	740	1112	1884	840	415	0	1545	356	0	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.8	45.8	26.6	44.1	16.8	15.1	50.0	0.0	29.0	60.2	0.0	61.0
Incr Delay (d2), s/veh	16.4	2.9	4.7	116.1	0.1	0.0	155.5	0.0	28.1	2.9	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.2	19.8	35.7	4.2	1.1	31.4	0.0	28.9	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.2	48.7	31.4	160.2	16.9	15.1	205.5	0.0	57.1	63.1	0.0	69.7
LnGrp LOS	E	D	C	F	B	B	F	A	F	E	A	E
Approach Vol, veh/h		1196			1967			2119			92	
Approach Delay, s/veh		41.4			117.4			95.1			67.3	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.0	36.4		10.8	8.6	74.8		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	41.9	30.6		26.0	7.0	65.5		30.2				
Max Q Clear Time (g_c+I1), s	43.9	32.6		6.1	4.4	12.3		32.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			90.8
HCM 6th LOS			F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	90	110	1960	1680	60
Future Volume (vph)	30	90	110	1960	1680	60
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	17.1	6.6	68.1	53.8	53.8
Actuated g/C Ratio	0.14	0.21	0.08	0.83	0.66	0.66
v/c Ratio	0.13	0.29	0.44	0.72	0.79	0.06
Control Delay	31.2	24.4	43.1	9.6	16.6	6.1
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	31.2	24.4	43.1	10.0	16.6	6.1
LOS	C	C	D	B	B	A
Approach Delay	26.1			11.8	16.2	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	90	110	1960	1680	60
Future Volume (veh/h)	30	90	110	1960	1680	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	98	120	2130	1826	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	186	287	265	2663	2135	952
Arrive On Green	0.10	0.10	0.08	0.75	0.60	0.60
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	33	98	120	2130	1826	65
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.2	3.8	2.4	26.6	29.9	1.2
Cycle Q Clear(g_c), s	1.2	3.8	2.4	26.6	29.9	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	186	287	265	2663	2135	952
V/C Ratio(X)	0.18	0.34	0.45	0.80	0.86	0.07
Avail Cap(c_a), veh/h	703	747	317	3085	2504	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	25.4	31.3	5.6	11.6	5.9
Incr Delay (d2), s/veh	0.5	0.7	1.2	1.4	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.6	1.0	6.0	10.2	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.5	26.1	32.6	6.9	14.4	5.9
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	131			2250	1891	
Approach Delay, s/veh	26.9			8.3	14.1	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		12.0	10.5	48.4
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		28.6		5.8	4.4	31.9
Green Ext Time (p_c), s		18.3		0.5	0.1	10.7

Intersection Summary			
HCM 6th Ctrl Delay			11.4
HCM 6th LOS			B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	170	20	60	10	40	90	1850	50	1640	140
Future Volume (vph)	170	20	60	10	40	90	1850	50	1640	140
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	11.9	62.1	11.2	61.4	61.4
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	10.8%	56.5%	10.2%	55.8%	55.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	19.4	19.4		19.4	19.4	6.8	58.5	6.0	55.3	55.3
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.07	0.60	0.06	0.57	0.57
v/c Ratio	0.71	0.30		0.30	0.11	0.79	0.70	0.50	0.89	0.16
Control Delay	50.8	11.2		35.4	2.2	86.5	16.8	62.9	26.3	7.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	5.5	0.0
Total Delay	50.8	11.2		35.4	2.2	86.5	16.8	62.9	31.9	7.2
LOS	D	B		D	A	F	B	E	C	A
Approach Delay		35.2		23.4			19.8		30.8	
Approach LOS		D		C			B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 97.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	20	90	60	10	40	90	1850	100	50	1640	140
Future Volume (veh/h)	170	20	90	60	10	40	90	1850	100	50	1640	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	22	98	65	11	43	98	2011	109	54	1783	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	78	347	294	45	413	116	2733	148	69	1867	833
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.07	0.55	0.55	0.04	0.53	0.53
Sat Flow, veh/h	1350	299	1332	884	173	1585	1781	4958	268	1781	3554	1585
Grp Volume(v), veh/h	185	0	120	76	0	43	98	1378	742	54	1783	152
Grp Sat Flow(s),veh/h/ln	1350	0	1631	1057	0	1585	1781	1702	1822	1781	1777	1585
Q Serve(g_s), s	14.0	0.0	6.1	4.5	0.0	2.2	5.7	31.9	32.2	3.1	50.0	5.3
Cycle Q Clear(g_c), s	24.6	0.0	6.1	10.7	0.0	2.2	5.7	31.9	32.2	3.1	50.0	5.3
Prop In Lane	1.00		0.82	0.86		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	283	0	425	339	0	413	116	1877	1005	69	1867	833
V/C Ratio(X)	0.65	0.00	0.28	0.22	0.00	0.10	0.85	0.73	0.74	0.78	0.96	0.18
Avail Cap(c_a), veh/h	345	0	499	400	0	485	116	1877	1005	104	1890	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	30.9	34.5	0.0	29.4	48.4	17.7	17.8	49.8	23.6	13.0
Incr Delay (d2), s/veh	3.2	0.0	0.4	0.3	0.0	0.1	40.8	1.5	2.9	18.8	11.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	2.5	1.7	0.0	0.8	3.8	12.2	13.5	1.8	22.6	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	31.2	34.8	0.0	29.5	89.1	19.2	20.7	68.6	35.5	13.1
LnGrp LOS	D	A	C	C	A	C	F	B	C	E	D	B
Approach Vol, veh/h		305			119			2218			1989	
Approach Delay, s/veh		40.2			32.9			22.8			34.7	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	63.4		31.9	11.9	60.7		31.9				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.1	56.3		* 32	6.8	55.6		* 32				
Max Q Clear Time (g_c+I1), s	5.1	34.2		26.6	7.7	52.0		12.7				
Green Ext Time (p_c), s	0.0	12.5		0.6	0.0	2.9		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			29.3
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	10	10	510	1750	5	1500
Future Volume (vph)	10	10	10	510	1750	5	1500
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	31.0	81.9	11.1	62.0
Total Split (%)	22.0%	16.0%	16.0%	20.7%	54.6%	7.4%	41.3%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	25.9	12.2	12.2	25.2	82.3	6.0	54.0
Actuated g/C Ratio	0.19	0.09	0.09	0.18	0.59	0.04	0.39
v/c Ratio	0.88	0.56	0.04	0.89	0.68	0.07	0.91
Control Delay	62.6	76.0	0.3	73.9	22.2	69.6	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	76.0	0.3	73.9	22.2	69.6	48.9
LOS	E	E	A	E	C	E	D
Approach Delay	62.6	67.5			33.3		49.0
Approach LOS	E	E			C		D

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 139.3	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 87.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	10	220	70	10	10	510	1750	120	5	1500	140
Future Volume (veh/h)	320	10	220	70	10	10	510	1750	120	5	1500	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	11	239	76	11	11	554	1902	130	5	1630	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	15	318	98	14	99	617	2715	185	14	1831	170
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.18	0.56	0.56	0.01	0.39	0.39
Sat Flow, veh/h	1781	70	1526	1565	227	1585	3456	4882	333	1781	4752	442
Grp Volume(v), veh/h	348	0	250	87	0	11	554	1324	708	5	1167	615
Grp Sat Flow(s),veh/h/ln	1781	0	1596	1792	0	1585	1728	1702	1811	1781	1702	1791
Q Serve(g_s), s	25.5	0.0	19.5	6.3	0.0	0.9	20.8	37.5	37.8	0.4	42.5	42.7
Cycle Q Clear(g_c), s	25.5	0.0	19.5	6.3	0.0	0.9	20.8	37.5	37.8	0.4	42.5	42.7
Prop In Lane	1.00		0.96	0.87		1.00	1.00		0.18	1.00		0.25
Lane Grp Cap(c), veh/h	371	0	333	112	0	99	617	1893	1007	14	1312	690
V/C Ratio(X)	0.94	0.00	0.75	0.77	0.00	0.11	0.90	0.70	0.70	0.37	0.89	0.89
Avail Cap(c_a), veh/h	376	0	337	257	0	227	675	1927	1025	81	1417	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	49.3	61.2	0.0	58.7	53.3	21.4	21.5	65.5	38.1	38.2
Incr Delay (d2), s/veh	30.6	0.0	9.0	10.8	0.0	0.5	14.2	1.1	2.1	15.9	7.0	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	0.0	8.6	3.2	0.0	0.4	10.2	14.9	16.2	0.2	18.8	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	0.0	58.3	72.0	0.0	59.2	67.5	22.5	23.6	81.4	45.1	50.6
LnGrp LOS	F	A	E	E	A	E	E	C	C	F	D	D
Approach Vol, veh/h		598			98			2586			1787	
Approach Delay, s/veh		72.2			70.6			32.4			47.1	
Approach LOS		E			E			C			D	

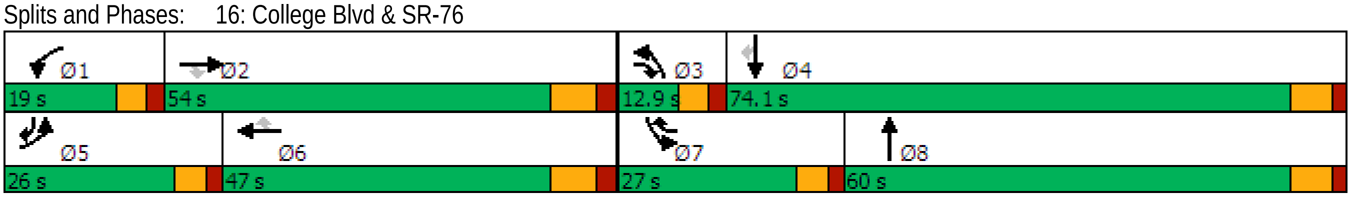
Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	80.6		32.7	28.8	57.9		13.3
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0
Max Green Setting (Gmax), s	6.0	75.1		28.0	25.9	55.2		19.0
Max Q Clear Time (g_c+I1), s	2.4	39.8		27.5	22.8	44.7		8.3
Green Ext Time (p_c), s	0.0	14.8		0.2	0.9	6.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	660	1580	70	390	1070	760	60	930	660	900	520
Future Volume (vph)	660	1580	70	390	1070	760	60	930	660	900	520
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	26.0	54.0	12.9	19.0	47.0	27.0	12.9	60.0	27.0	74.1	26.0
Total Split (%)	16.3%	33.8%	8.1%	11.9%	29.4%	16.9%	8.1%	37.5%	16.9%	46.3%	16.3%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	20.3	46.0	61.0	13.3	39.0	68.3	7.0	53.2	21.3	67.5	94.6
Actuated g/C Ratio	0.13	0.29	0.38	0.08	0.24	0.43	0.04	0.33	0.13	0.42	0.59
v/c Ratio	1.65	1.18	0.11	1.49	0.94	1.12	0.43	1.28	1.57	0.66	0.59
Control Delay	341.9	135.2	2.4	283.6	73.6	109.5	83.7	174.0	308.5	39.6	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	341.9	135.2	2.4	283.6	73.6	109.5	83.7	174.0	308.5	39.6	20.4
LOS	F	F	A	F	E	F	F	F	F	D	C
Approach Delay		190.3			122.8			170.2		120.1	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.65	
Intersection Signal Delay: 149.9	Intersection LOS: F
Intersection Capacity Utilization 121.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	660	1580	70	390	1070	760	60	930	430	660	900	520
Future Volume (veh/h)	660	1580	70	390	1070	760	60	930	430	660	900	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	717	1717	76	424	1163	826	65	1011	467	717	978	565
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1468	503	287	1245	597	102	791	358	460	1550	892
Arrive On Green	0.13	0.29	0.29	0.08	0.24	0.24	0.03	0.33	0.33	0.13	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2378	1076	3456	3554	1585
Grp Volume(v), veh/h	717	1717	76	424	1163	826	65	750	728	717	978	565
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1677	1728	1777	1585
Q Serve(g_s), s	20.3	46.0	5.5	13.3	35.7	39.0	3.0	53.2	53.2	21.3	34.3	38.7
Cycle Q Clear(g_c), s	20.3	46.0	5.5	13.3	35.7	39.0	3.0	53.2	53.2	21.3	34.3	38.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	438	1468	503	287	1245	597	102	591	558	460	1550	892
V/C Ratio(X)	1.64	1.17	0.15	1.48	0.93	1.38	0.64	1.27	1.31	1.56	0.63	0.63
Avail Cap(c_a), veh/h	438	1468	503	287	1245	597	156	591	558	460	1550	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	57.0	39.2	73.3	59.2	49.8	76.8	53.4	53.4	69.3	35.1	23.7
Incr Delay (d2), s/veh	296.1	84.0	0.1	232.1	12.9	182.5	6.4	134.2	150.3	261.8	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.0	31.2	2.2	15.2	16.9	54.1	1.4	45.7	45.6	26.2	15.1	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	366.0	141.0	39.3	305.5	72.1	232.4	83.2	187.6	203.7	331.2	35.9	25.2
LnGrp LOS	F	F	D	F	E	F	F	F	F	F	D	C
Approach Vol, veh/h		2510			2413			1543			2260	
Approach Delay, s/veh		202.2			168.0			190.8			126.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	54.0	10.4	76.6	26.0	47.0	27.0	60.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 13	46.0	* 7.2	67.3	* 20	39.0	* 21	53.2
Max Q Clear Time (g_c+I1), s	15.3	48.0	5.0	40.7	22.3	41.0	23.3	55.2
Green Ext Time (p_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	171.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	90	110	150	580	130	280	850	930	310	1090	70
Future Volume (vph)	90	110	150	580	130	280	850	930	310	1090	70
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	16.0	30.0	30.0	21.0	35.0	22.0	48.0	48.0	21.0	47.0	47.0
Total Split (%)	13.3%	25.0%	25.0%	17.5%	29.2%	18.3%	40.0%	40.0%	17.5%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	10.3	15.7	15.7	17.1	22.4	18.1	44.2	44.2	17.1	43.1	43.1
Actuated g/C Ratio	0.09	0.14	0.14	0.16	0.20	0.16	0.40	0.40	0.16	0.39	0.39
v/c Ratio	0.59	0.45	0.45	1.18	0.76	1.05	0.45	1.07	1.23	0.85	0.11
Control Delay	64.1	47.9	10.2	142.2	48.4	111.6	25.8	68.0	171.4	38.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	47.9	10.2	142.2	48.4	111.6	25.8	68.0	171.4	38.8	1.6
LOS	E	D	B	F	D	F	C	E	F	D	A
Approach Delay		35.9			112.4		56.5			65.0	
Approach LOS		D			F		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 67.7	Intersection LOS: E
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	110	150	580	130	140	280	850	930	310	1090	70
Future Volume (veh/h)	90	110	150	580	130	140	280	850	930	310	1090	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	120	163	630	141	152	304	924	1011	337	1185	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	238	202	545	178	191	298	2085	647	281	1418	633
Arrive On Green	0.07	0.13	0.13	0.16	0.22	0.22	0.17	0.41	0.41	0.16	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	3456	823	887	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	98	120	163	630	0	293	304	924	1011	337	1185	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1711	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	5.8	6.4	10.8	17.0	0.0	17.5	18.0	14.1	44.0	17.0	32.4	3.3
Cycle Q Clear(g_c), s	5.8	6.4	10.8	17.0	0.0	17.5	18.0	14.1	44.0	17.0	32.4	3.3
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	238	202	545	0	369	298	2085	647	281	1418	633
V/C Ratio(X)	0.79	0.50	0.81	1.16	0.00	0.79	1.02	0.44	1.56	1.20	0.84	0.12
Avail Cap(c_a), veh/h	198	451	383	545	0	492	298	2085	647	281	1418	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	43.8	45.7	45.4	0.0	40.0	44.9	23.0	31.9	45.4	29.2	20.4
Incr Delay (d2), s/veh	10.7	1.6	7.4	89.1	0.0	6.4	57.8	0.7	260.3	118.6	6.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.1	4.6	14.0	0.0	7.9	12.7	5.7	63.0	16.7	14.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	45.5	53.1	134.5	0.0	46.4	102.6	23.7	292.1	164.0	35.1	20.8
LnGrp LOS	E	D	D	F	A	D	F	C	F	F	D	C
Approach Vol, veh/h		381			923			2239			1598	
Approach Delay, s/veh		52.5			106.5			155.6			61.6	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	48.0	21.0	17.7	22.0	47.0	11.5	27.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	17.0	44.0	17.0	26.0	18.0	43.0	12.0	31.0				
Max Q Clear Time (g_c+I1), s	19.0	46.0	19.0	12.8	20.0	34.4	7.8	19.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	5.3	0.1	1.3				

Intersection Summary			
HCM 6th Ctrl Delay			110.0
HCM 6th LOS			F

Appendix Q

Horizon Year 2035 Alternative Segment Adjustments

2035 Alternative (no Pala and no Melrose) ADT Post-Processing Adjustments

Segment	2018 ADT	2018 Cap.	2018 LOS	2030 Circ. Element Alt + Project ADT	2030 Circ. Element Cap.	2030 Circ. Element LOS	2035 Post-Processing Adjustments Alt + N.River Farms + Project ADT		2035 Post-Processing Adjustments Cap.	2035 Post-Processing Adjustments LOS
Douglas Drive										
N. River Rd to Rainier Way	35,915	40,000	E	41,568	50,000	D	44,000	6%	50,000	D
Rainier Way to Pala Rd	36,579	40,000	E	41,568	50,000	D	44,000	6%	50,000	D
Pala Rd to El Camino Real	37,080	40,000	E	43,768	50,000	D	44,000	1%	50,000	D
El Camino Real to Mission Ave	23,305	30,000	D	25,628	40,000	C	26,000	1%	40,000	C
Mission Ave to SR-76	20,142	40,000	B	25,644	40,000	C	26,600	4%	40,000	C
North River Road										
Douglas Dr to Avenida Descanso	20,223	40,000	B	26,200	40,000	C	28,300	7%	40,000	C
Ave. Descanso to Riverview Way	18,195	40,000	B	26,200	40,000	C	28,300	7%	40,000	C
Riverview Way to Calle Montecito	19,589	40,000	B	26,200	40,000	C	28,300	7%	40,000	C
Calle Montecito to Redondo Dr	20,485	40,000	B	26,200	40,000	C	28,300	7%	40,000	C
Redondo Dr to College Blvd	20,383	40,000	B	26,040	40,000	C	27,000	4%	40,000	C
College Blvd to Vandergrift Blvd	31,503	45,000	C	41,920	45,000	E	42,000	0%	45,000	E
College Blvd										
N. River Rd to Buchanon Park	35,485	40,000	E	46,520	40,000	E	47,000	1%	50,000	E
Buchanon Park to Adams St	34,426	40,000	D	46,520	40,000	E	47,000	1%	50,000	E
Adams St to Via Cupeno	34,479	50,000	C	46,488	50,000	E	47,000	1%	50,000	E
Via Cupeno to SR-76	41,981	50,000	D	46,488	50,000	E	47,000	1%	50,000	E
SR-76										
Foussat Rd to Douglas Dr	41,500	60,000	C	62,612	60,000	F	63,000	1%	60,000	F
Douglas Dr to Rancho Del Oro	46,500	60,000	C	55,732	60,000	E	56,000	0%	60,000	E
Frazee Rd to College Blvd	41,000	60,000	C	53,562	60,000	D	54,200	1%	60,000	D
College Blvd to N. Santa Fe	46,000	60,000	C	62,788	60,000	F	63,000	0%	60,000	F

% change from Circ Elem.

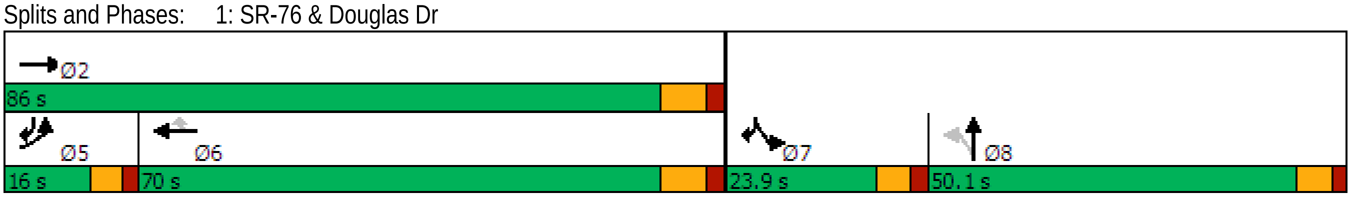
Appendix R

Horizon Year 2035 Alternative Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	292	1130	2200	239	288	587	
Future Volume (vph)	292	1130	2200	239	288	587	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	10.3	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	16.0	33.0	33.0	33.0	22.1		50.1
Total Split (s)	16.0	86.0	70.0	70.0	23.9		50.1
Total Split (%)	10.0%	53.8%	43.8%	43.8%	14.9%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	10.3	78.0	62.0	62.0	17.8	34.2	
Actuated g/C Ratio	0.09	0.71	0.56	0.56	0.16	0.31	
v/c Ratio	0.99	0.49	1.20	0.26	1.09	0.49	
Control Delay	97.7	7.9	119.2	3.1	124.6	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	97.7	7.9	119.2	3.1	124.6	4.3	
LOS	F	A	F	A	F	A	
Approach Delay		26.3	107.8				
Approach LOS		C	F				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 71.5	Intersection LOS: E
Intersection Capacity Utilization 100.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	1130	0	0	2200	239	0	0	0	288	0	587
Future Volume (veh/h)	292	1130	0	0	2200	239	0	0	0	288	0	587
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	317	1228	0	0	2391	260	0	0	0	313	0	638
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	324	2522	0	0	2005	894	0	2	0	289	0	0
Arrive On Green	0.09	0.71	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.16	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	313	
Grp Volume(v), veh/h	317	1228	0	0	2391	260	0	0	0	313	123.6	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	10.1	16.8	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Cycle Q Clear(g_c), s	10.1	16.8	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	324	2522	0	0	2005	894	0	2	0	289		
V/C Ratio(X)	0.98	0.49	0.00	0.00	1.19	0.29	0.00	0.00	0.00	1.08		
Avail Cap(c_a), veh/h	324	2522	0	0	2005	894	0	749	0	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	49.7	7.1	0.0	0.0	23.9	12.5	0.0	0.0	0.0	46.1		
Incr Delay (d2), s/veh	44.1	0.1	0.0	0.0	91.9	0.2	0.0	0.0	0.0	77.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.3	5.7	0.0	0.0	49.5	3.3	0.0	0.0	0.0	14.0		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.8	7.2	0.0	0.0	115.9	12.7	0.0	0.0	0.0	123.6		
LnGrp LOS	F	A	A	A	F	B	A	A	A	F		
Approach Vol, veh/h		1545			2651			0				
Approach Delay, s/veh		25.0			105.8			0.0				
Approach LOS		C			F							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		86.0			16.0	70.0	23.9	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		78.0			* 10	62.0	17.8	44.0				
Max Q Clear Time (g_c+I1), s		18.8			12.1	64.0	19.8	0.0				
Green Ext Time (p_c), s		8.1			0.0	0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		79.3
HCM 6th LOS		E

Notes

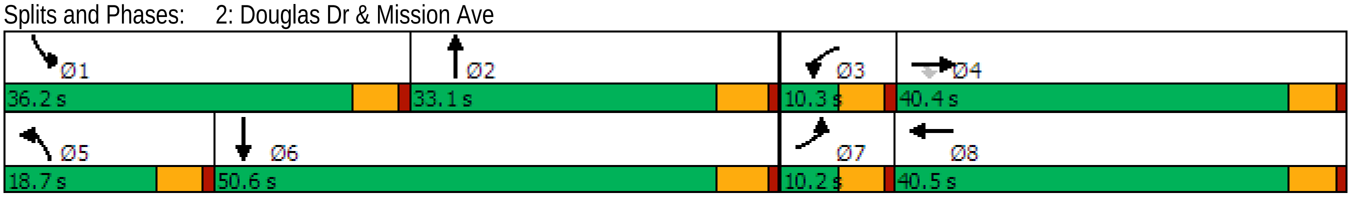
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	79	320	70	60	540	130	361	430	795
Future Volume (vph)	79	320	70	60	540	130	361	430	795
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.2	40.4	40.4	10.3	40.5	18.7	33.1	36.2	50.6
Total Split (%)	8.5%	33.7%	33.7%	8.6%	33.8%	15.6%	27.6%	30.2%	42.2%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.2	30.8	30.8	5.3	33.5	12.4	19.4	31.5	38.6
Actuated g/C Ratio	0.05	0.28	0.28	0.05	0.31	0.11	0.18	0.29	0.36
v/c Ratio	0.53	0.35	0.13	0.76	0.89	0.70	0.64	0.91	0.77
Control Delay	66.0	32.2	0.5	102.6	42.4	67.6	46.4	63.0	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	32.2	0.5	102.6	42.4	67.6	46.4	63.0	36.6
LOS	E	C	A	F	D	E	D	E	D
Approach Delay		33.2			46.1		51.9		45.2
Approach LOS		C			D		D		D

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 108.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 44.8 — Intersection LOS: D
Intersection Capacity Utilization 83.4% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Douglas Dr & Mission Ave



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	320	70	60	540	385	130	361	10	430	795	86
Future Volume (veh/h)	79	320	70	60	540	385	130	361	10	430	795	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	348	76	65	587	418	141	392	11	467	864	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	1141	509	83	640	456	176	496	14	501	1046	113
Arrive On Green	0.04	0.32	0.32	0.05	0.32	0.32	0.10	0.14	0.14	0.28	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	1781	1982	1411	1781	3530	99	1781	3236	348
Grp Volume(v), veh/h	86	348	76	65	526	479	141	197	206	467	474	483
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1616	1781	1777	1853	1781	1777	1808
Q Serve(g_s), s	2.5	7.5	3.5	3.7	29.0	29.0	7.9	10.9	11.0	26.0	25.1	25.1
Cycle Q Clear(g_c), s	2.5	7.5	3.5	3.7	29.0	29.0	7.9	10.9	11.0	26.0	25.1	25.1
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	155	1141	509	83	574	522	176	249	260	501	575	584
V/C Ratio(X)	0.56	0.31	0.15	0.78	0.92	0.92	0.80	0.79	0.79	0.93	0.83	0.83
Avail Cap(c_a), veh/h	173	1222	545	91	613	557	238	476	497	544	782	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	26.0	24.6	48.0	33.1	33.1	44.9	42.3	42.3	35.6	31.8	31.8
Incr Delay (d2), s/veh	3.1	0.1	0.1	31.7	18.1	19.5	13.2	5.5	5.4	22.1	5.3	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.2	1.3	2.4	15.1	13.9	4.1	5.1	5.4	14.1	11.4	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	26.2	24.8	79.7	51.3	52.6	58.1	47.8	47.7	57.7	37.1	37.0
LnGrp LOS	D	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		510			1070			544			1424	
Approach Delay, s/veh		30.1			53.6			50.4			43.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.8	20.1	9.9	38.1	15.1	38.7	9.7	38.3
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	31.1	27.3	5.2	35.0	13.6	44.8	5.1	35.1
Max Q Clear Time (g_c+I1), s	28.0	13.0	5.7	9.5	9.9	27.1	4.5	31.0
Green Ext Time (p_c), s	0.7	1.3	0.0	1.9	0.1	4.1	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

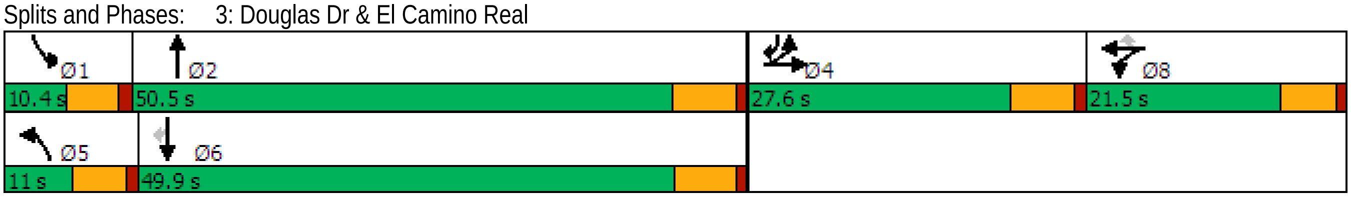
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	380	20	50	40	5	60	655	10	1221	1259
Future Volume (vph)	380	20	50	40	5	60	655	10	1221	1259
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	27.6	27.6		21.5	21.5	11.0	50.5	10.4	49.9	27.6
Total Split (%)	25.1%	25.1%		19.5%	19.5%	10.0%	45.9%	9.5%	45.4%	25.1%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	20.5	20.5	100.7	12.3	12.3	5.7	47.6	5.1	41.5	68.2
Actuated g/C Ratio	0.20	0.20	1.00	0.12	0.12	0.06	0.47	0.05	0.41	0.68
v/c Ratio	0.59	0.06	0.03	0.59	0.02	0.65	0.45	0.12	0.91	0.73
Control Delay	42.0	36.2	0.0	55.3	0.0	79.8	19.5	53.2	39.4	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	36.2	0.0	55.3	0.0	79.8	19.5	53.2	39.4	14.3
LOS	D	D	A	E	A	E	B	D	D	B
Approach Delay		37.1		53.3			24.3		26.8	
Approach LOS		D		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 100.7	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	20	50	80	40	5	60	655	40	10	1221	1259
Future Volume (veh/h)	380	20	50	80	40	5	60	655	40	10	1221	1259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	413	22	0	87	43	5	65	712	43	11	1327	1368
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	283		111	55	145	84	1684	102	24	1639	1708
Arrive On Green	0.15	0.15	0.00	0.09	0.09	0.09	0.05	0.49	0.49	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1211	599	1585	1781	3405	206	1781	3554	2790
Grp Volume(v), veh/h	413	22	0	130	0	5	65	371	384	11	1327	1368
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1833	1781	1777	1395
Q Serve(g_s), s	10.8	0.9	0.0	6.6	0.0	0.3	3.4	12.5	12.5	0.6	30.0	34.9
Cycle Q Clear(g_c), s	10.8	0.9	0.0	6.6	0.0	0.3	3.4	12.5	12.5	0.6	30.0	34.9
Prop In Lane	1.00		1.00	0.67		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	522	283		165	0	145	84	879	907	24	1639	1708
V/C Ratio(X)	0.79	0.08		0.79	0.00	0.03	0.78	0.42	0.42	0.46	0.81	0.80
Avail Cap(c_a), veh/h	792	428		310	0	271	107	879	907	95	1670	1733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	34.1	0.0	41.5	0.0	38.7	44.0	15.1	15.1	45.8	21.6	13.8
Incr Delay (d2), s/veh	3.1	0.1	0.0	8.0	0.0	0.1	23.6	0.3	0.3	13.5	3.1	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.4	0.0	3.3	0.0	0.1	2.0	4.9	5.0	0.3	12.5	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	34.2	0.0	49.5	0.0	38.8	67.7	15.4	15.4	59.3	24.7	16.5
LnGrp LOS	D	C		D	A	D	E	B	B	E	C	B
Approach Vol, veh/h		435	A		135			820			2706	
Approach Delay, s/veh		41.0			49.1			19.5			20.7	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	52.4		20.3	9.8	49.3		14.0
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	44.3		21.4	5.6	* 44		16.0
Max Q Clear Time (g_c+I1), s	2.6	14.5		12.8	5.4	36.9		8.6
Green Ext Time (p_c), s	0.0	3.3		1.4	0.0	6.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	80	5	110	20	5	50	1005	20	20	2170	80
Future Volume (vph)	80	5	110	20	5	50	1005	20	20	2170	80
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	82.4	21.0	11.5	83.5	30.1
Total Split (%)	20.8%	20.8%	20.8%	14.5%	14.5%	7.2%	56.8%	14.5%	7.9%	57.6%	20.8%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	7.2	7.2	5.0	82.1	90.0	6.0	78.2	95.4
Actuated g/C Ratio	0.09	0.09	0.09	0.06	0.06	0.04	0.68	0.75	0.05	0.65	0.79
v/c Ratio	0.30	0.30	0.47	0.21	0.30	0.74	0.45	0.02	0.25	1.03	0.07
Control Delay	56.5	56.4	15.0	62.1	28.3	109.1	12.3	0.1	66.5	49.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	56.4	15.0	62.1	28.3	109.1	12.3	0.1	66.5	49.9	0.9
LOS	E	E	B	E	C	F	B	A	E	D	A
Approach Delay		33.0			40.7		16.6			48.3	
Approach LOS		C			D		B			D	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 120.8	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	5	110	20	5	30	50	1005	20	20	2170	80
Future Volume (veh/h)	80	5	110	20	5	30	50	1005	20	20	2170	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	0	120	22	5	33	54	1092	22	22	2359	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	153	77	9	61	69	2339	1111	39	2277	1169
Arrive On Green	0.10	0.00	0.10	0.04	0.04	0.04	0.04	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	91	0	120	22	0	38	54	1092	22	22	2359	87
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	8.9	1.4	0.0	2.8	3.6	18.3	0.5	1.5	77.3	1.8
Cycle Q Clear(g_c), s	2.9	0.0	8.9	1.4	0.0	2.8	3.6	18.3	0.5	1.5	77.3	1.8
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	153	77	0	70	69	2339	1111	39	2277	1169
V/C Ratio(X)	0.26	0.00	0.78	0.29	0.00	0.55	0.78	0.47	0.02	0.57	1.04	0.07
Avail Cap(c_a), veh/h	738	0	328	235	0	213	74	2339	1111	90	2277	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	53.3	55.9	0.0	56.6	57.4	10.2	5.5	58.5	21.7	4.4
Incr Delay (d2), s/veh	0.4	0.0	8.5	2.0	0.0	6.5	38.0	0.1	0.0	12.6	28.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.9	0.7	0.0	1.3	2.4	6.8	0.2	0.8	38.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	0.0	61.8	57.9	0.0	63.1	95.5	10.3	5.5	71.1	50.6	4.4
LnGrp LOS	D	A	E	E	A	E	F	B	A	E	F	A
Approach Vol, veh/h		211			60			1168			2468	
Approach Delay, s/veh		57.1			61.2			14.2			49.2	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	85.6		16.7	10.1	83.5		10.3				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	6.1	76.2		25.0	5.0	77.3		15.9				
Max Q Clear Time (g_c+I1), s	3.5	20.3		10.9	5.6	79.3		4.8				
Green Ext Time (p_c), s	0.0	6.9		0.7	0.0	0.0		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			39.3
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	20	5	130	80	5	10	1095	40	5	2070	40
Future Volume (vph)	20	5	130	80	5	10	1095	40	5	2070	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	73.0	73.0	10.4	83.4	83.4
Total Split (%)	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	60.8%	60.8%	8.7%	69.5%	69.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		14.5	14.5		14.5	14.5	74.9	74.9	5.0	76.7	76.7
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.73	0.73	0.05	0.75	0.75
v/c Ratio		0.14	0.48		0.49	0.04	0.46	0.04	0.06	0.85	0.04
Control Delay		38.1	22.7		48.4	0.2	8.4	1.5	52.6	15.1	4.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.1	22.7		48.4	0.2	8.4	1.5	52.6	15.1	4.0
LOS		D	C		D	A	A	A	D	B	A
Approach Delay		25.2			43.2		8.2			15.0	
Approach LOS		C			D		A			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	130	80	5	10	0	1095	40	5	2070	40
Future Volume (veh/h)	20	5	130	80	5	10	0	1095	40	5	2070	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	5	141	87	5	11	0	1190	43	5	2250	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	54	7	423	58	2	423	0	2089	932	11	2271	1013
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.00	0.59	0.59	0.01	0.64	0.64
Sat Flow, veh/h	0	27	1585	0	7	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	27	0	141	92	0	11	0	1190	43	5	2250	43
Grp Sat Flow(s),veh/h/ln	27	0	1585	7	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	8.6	0.0	0.0	0.6	0.0	24.9	1.4	0.3	74.7	1.2
Cycle Q Clear(g_c), s	32.0	0.0	8.6	32.0	0.0	0.6	0.0	24.9	1.4	0.3	74.7	1.2
Prop In Lane	0.81		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	0	423	60	0	423	0	2089	932	11	2271	1013
V/C Ratio(X)	0.44	0.00	0.33	1.53	0.00	0.03	0.00	0.57	0.05	0.44	0.99	0.04
Avail Cap(c_a), veh/h	62	0	423	60	0	423	0	2089	932	74	2271	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	35.4	59.0	0.0	32.5	0.0	15.3	10.5	59.4	21.3	8.0
Incr Delay (d2), s/veh	4.8	0.0	0.5	304.9	0.0	0.0	0.0	0.4	0.0	24.4	16.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.4	6.9	0.0	0.2	0.0	9.8	0.5	0.2	33.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	0.0	35.9	363.9	0.0	32.5	0.0	15.7	10.5	83.8	37.9	8.0
LnGrp LOS	E	A	D	F	A	C	A	B	B	F	D	A
Approach Vol, veh/h		168			103			1233			2298	
Approach Delay, s/veh		39.2			328.5			15.5			37.5	
Approach LOS		D			F			B			D	

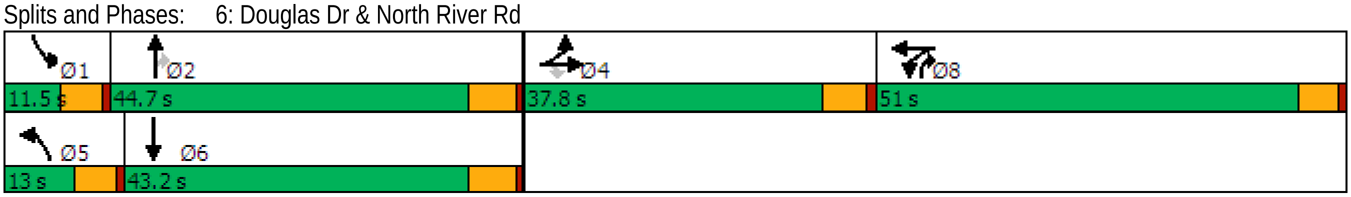
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	77.2		36.6		83.4		36.6				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	66.3		32.0		76.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	26.9		34.0		76.7		34.0				
Green Ext Time (p_c), s	0.0	7.8		0.0		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			38.3
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	109	220	1000	58	80	510	415	20	830
Future Volume (vph)	60	109	220	1000	58	80	510	415	20	830
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	51.0	51.0	13.0	44.7	51.0	11.5	43.2
Total Split (%)	26.1%	26.1%	26.1%	35.2%	35.2%	9.0%	30.8%	35.2%	7.9%	29.8%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	18.9	18.9	18.9	45.8	45.8	7.6	43.5	92.4	6.0	37.1
Actuated g/C Ratio	0.14	0.14	0.14	0.35	0.35	0.06	0.33	0.70	0.05	0.28
v/c Ratio	0.26	0.23	0.76	0.98	0.93dl	0.86	0.48	0.22	0.28	0.92
Control Delay	51.6	50.2	45.0	76.1	38.4	119.7	39.4	0.9	73.0	61.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	50.2	45.0	76.1	38.4	119.7	39.4	0.9	73.0	61.6
LOS	D	D	D	E	D	F	D	A	E	E
Approach Delay		47.4			55.9		29.9			61.9
Approach LOS		D			E		C			E

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 132.3	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 48.6	Intersection LOS: D
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	109	220	1000	58	20	80	510	415	20	830	10
Future Volume (veh/h)	60	109	220	1000	58	20	80	510	415	20	830	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	118	239	1087	63	22	87	554	451	22	902	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	625	279	1161	432	151	101	1090	1765	37	973	12
Arrive On Green	0.18	0.18	0.18	0.54	0.33	0.33	0.06	0.31	0.51	0.02	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	3563	1325	463	1781	3554	2790	1781	3595	44
Grp Volume(v), veh/h	65	118	239	1087	0	85	87	554	451	22	446	467
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1787	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	4.2	3.8	19.6	37.9	0.0	4.5	6.5	17.1	7.7	1.6	32.7	32.7
Cycle Q Clear(g_c), s	4.2	3.8	19.6	37.9	0.0	4.5	6.5	17.1	7.7	1.6	32.7	32.7
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	313	625	279	1161	0	583	101	1090	1765	37	481	504
V/C Ratio(X)	0.21	0.19	0.86	0.94	0.00	0.15	0.86	0.51	0.26	0.59	0.93	0.93
Avail Cap(c_a), veh/h	426	850	379	1215	0	609	101	1090	1765	81	492	515
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	47.0	53.5	29.2	0.0	31.9	62.5	38.1	7.3	64.9	47.5	47.5
Incr Delay (d2), s/veh	0.5	0.2	15.2	13.3	0.0	0.2	48.1	0.8	0.2	14.1	24.5	23.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.7	9.0	15.6	0.0	2.0	4.3	7.6	4.2	0.9	17.7	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	47.2	68.7	42.4	0.0	32.1	110.6	38.9	7.5	79.0	71.9	71.1
LnGrp LOS	D	D	E	D	A	C	F	D	A	E	E	E
Approach Vol, veh/h		422			1172			1092			935	
Approach Delay, s/veh		59.4			41.7			31.6			71.7	
Approach LOS		E			D			C			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	47.2		29.3	13.0	42.4		49.0
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	6.1	38.5		32.0	7.6	37.0		45.6
Max Q Clear Time (g_c+I1), s	3.6	19.1		21.6	8.5	34.7		39.9
Green Ext Time (p_c), s	0.0	9.4		2.0	0.0	1.5		3.7

Intersection Summary		
HCM 6th Ctrl Delay		48.5
HCM 6th LOS		D

Notes

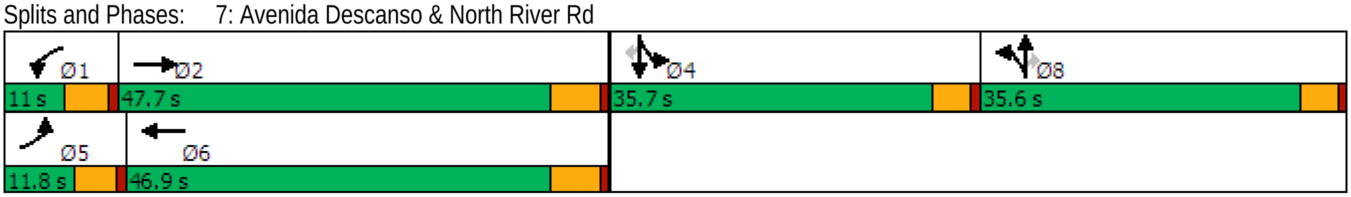
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	70	544	20	988	5	40	20	140
Future Volume (vph)	70	544	20	988	5	40	20	140
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6
Total Split (s)	11.8	47.7	11.0	46.9	35.6	35.6	35.7	35.7
Total Split (%)	9.1%	36.7%	8.5%	36.1%	27.4%	27.4%	27.5%	27.5%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	6.9	49.8	6.0	41.6	9.9	9.9	15.6	15.6
Actuated g/C Ratio	0.07	0.53	0.06	0.44	0.10	0.10	0.16	0.16
v/c Ratio	0.59	0.32	0.20	0.74	0.05	0.17	0.59	0.44
Control Delay	65.9	17.8	52.9	28.0	39.0	1.4	45.8	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	17.8	52.9	28.0	39.0	1.4	45.8	17.3
LOS	E	B	D	C	D	A	D	B
Approach Delay		23.2		28.5	8.5		32.5	
Approach LOS		C		C	A		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 94.7	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	544	10	20	988	60	5	5	40	140	20	140
Future Volume (veh/h)	70	544	10	20	988	60	5	5	40	140	20	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	591	11	22	1074	65	5	5	43	152	22	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1521	28	45	1340	81	85	85	148	225	33	228
Arrive On Green	0.06	0.43	0.43	0.03	0.39	0.39	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1781	3569	66	1781	3404	206	912	912	1585	1565	227	1585
Grp Volume(v), veh/h	76	294	308	22	560	579	10	0	43	174	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1858	1781	1777	1833	1825	0	1585	1792	0	1585
Q Serve(g_s), s	2.7	7.3	7.3	0.8	18.0	18.0	0.3	0.0	1.6	5.9	0.0	5.9
Cycle Q Clear(g_c), s	2.7	7.3	7.3	0.8	18.0	18.0	0.3	0.0	1.6	5.9	0.0	5.9
Prop In Lane	1.00		0.04	1.00		0.11	0.50		1.00	0.87		1.00
Lane Grp Cap(c), veh/h	103	757	792	45	700	722	170	0	148	258	0	228
V/C Ratio(X)	0.74	0.39	0.39	0.49	0.80	0.80	0.06	0.00	0.29	0.68	0.00	0.67
Avail Cap(c_a), veh/h	185	1155	1208	163	1133	1169	877	0	762	865	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	12.7	12.7	31.0	17.3	17.3	26.7	0.0	27.3	26.2	0.0	26.1
Incr Delay (d2), s/veh	9.9	0.3	0.3	8.0	2.2	2.1	0.1	0.0	1.1	3.1	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.7	2.8	0.4	6.9	7.2	0.1	0.0	0.6	2.6	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	13.0	13.0	39.0	19.5	19.4	26.8	0.0	28.3	29.2	0.0	29.5
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		678			1161			53			326	
Approach Delay, s/veh		16.0			19.8			28.0			29.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	33.3		13.9	8.8	31.2		10.6				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	41.9		31.1	6.7	41.1		31.0				
Max Q Clear Time (g_c+I1), s	2.8	9.3		7.9	4.7	20.0		3.6				
Green Ext Time (p_c), s	0.0	2.5		1.3	0.0	5.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	714	1068	10	10	30
Future Vol, veh/h	20	714	1068	10	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	776	1161	11	11	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1172	0	-	0	1599	586
Stage 1	-	-	-	-	1167	-
Stage 2	-	-	-	-	432	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	592	-	-	-	97	454
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	592	-	-	-	93	454
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	24.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	592	-	-	-	230
HCM Lane V/C Ratio	0.037	-	-	-	0.189
HCM Control Delay (s)	11.3	-	-	-	24.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	720	0	0	1130	10	0	0	0	20	0	50
Future Vol, veh/h	30	720	0	0	1130	10	0	0	0	20	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	783	0	0	1228	11	0	0	0	22	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1239	0	0	783	0	0	-	-	392	1692	2083	620
Stage 1	-	-	-	-	-	-	-	-	-	1234	1234	-
Stage 2	-	-	-	-	-	-	-	-	-	458	849	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	558	-	-	831	-	-	0	0	607	60	52	431
Stage 1	-	-	-	-	-	-	0	0	-	187	247	-
Stage 2	-	-	-	-	-	-	0	0	-	552	375	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	558	-	-	831	-	-	-	-	607	57	49	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	57	49	-
Stage 1	-	-	-	-	-	-	-	-	-	176	247	-
Stage 2	-	-	-	-	-	-	-	-	-	519	353	-

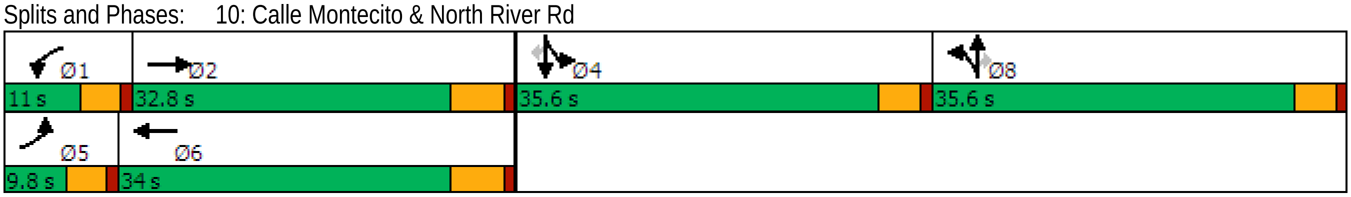
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	0	51.4
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	558	-	-	831	-	-	150
HCM Lane V/C Ratio	-	0.058	-	-	-	-	-	0.507
HCM Control Delay (s)	0	11.9	-	-	0	-	-	51.4
HCM Lane LOS	A	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	2.4

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	558	40	914	5	10	5	140
Future Volume (vph)	60	558	40	914	5	10	5	140
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.5	31.0	6.5	29.6	9.9	9.9	18.2	18.2
Actuated g/C Ratio	0.07	0.38	0.08	0.37	0.12	0.12	0.22	0.22
v/c Ratio	0.54	0.47	0.30	0.89	0.07	0.04	0.69	0.34
Control Delay	59.5	24.5	47.2	36.8	33.0	0.2	40.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	24.5	47.2	36.8	33.0	0.2	40.0	12.1
LOS	E	C	D	D	C	A	D	B
Approach Delay		27.7		37.2	19.6		30.1	
Approach LOS		C		D	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.9	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	558	30	40	914	130	10	5	10	250	5	140
Future Volume (veh/h)	60	558	30	40	914	130	10	5	10	250	5	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	607	33	43	993	141	11	5	11	272	5	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1300	71	73	1150	163	111	50	141	354	7	320
Arrive On Green	0.05	0.38	0.38	0.04	0.37	0.37	0.09	0.09	0.09	0.20	0.20	0.20
Sat Flow, veh/h	1781	3428	186	1781	3124	443	1243	565	1585	1751	32	1585
Grp Volume(v), veh/h	65	314	326	43	564	570	16	0	11	277	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1791	1808	0	1585	1783	0	1585
Q Serve(g_s), s	2.4	9.0	9.0	1.6	19.8	19.8	0.5	0.0	0.4	9.9	0.0	5.7
Cycle Q Clear(g_c), s	2.4	9.0	9.0	1.6	19.8	19.8	0.5	0.0	0.4	9.9	0.0	5.7
Prop In Lane	1.00		0.10	1.00		0.25	0.69		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	93	674	697	73	654	659	161	0	141	360	0	320
V/C Ratio(X)	0.70	0.47	0.47	0.59	0.86	0.86	0.10	0.00	0.08	0.77	0.00	0.47
Avail Cap(c_a), veh/h	140	716	740	172	747	753	833	0	730	821	0	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.4	15.7	15.8	31.7	19.7	19.7	28.2	0.0	28.1	25.4	0.0	23.7
Incr Delay (d2), s/veh	9.1	0.5	0.5	7.3	9.3	9.3	0.3	0.0	0.2	3.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.4	3.5	0.8	9.1	9.2	0.2	0.0	0.2	4.3	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	16.3	16.2	39.0	29.0	29.0	28.4	0.0	28.3	28.8	0.0	24.8
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		705			1177			27			429	
Approach Delay, s/veh		18.5			29.4			28.4			27.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	31.2		18.2	8.0	30.5		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0				
Max Q Clear Time (g_c+I1), s	3.6	11.0		11.9	4.4	21.8		2.5				
Green Ext Time (p_c), s	0.0	2.4		1.7	0.0	2.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			25.7
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	30	808	1017	5	0	110	0	
Future Volume (vph)	30	808	1017	5	0	110	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.4	32.0	28.5		14.6	13.4	13.4	
Actuated g/C Ratio	0.12	0.54	0.48		0.24	0.22	0.22	
v/c Ratio	0.15	0.46	0.70		0.02	0.38	0.31	
Control Delay	35.7	9.2	16.4		0.1	27.0	6.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	35.7	9.2	16.4		0.1	27.0	6.5	
LOS	D	A	B		A	C	A	
Approach Delay		10.2	16.4		0.1		15.7	
Approach LOS		B	B		A		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 59.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	808	0	0	1017	70	5	0	5	110	0	137
Future Volume (veh/h)	30	808	0	0	1017	70	5	0	5	110	0	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	878	0	0	1105	76	5	0	5	120	0	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	2062	0	4	1503	103	163	34	80	400	0	245
Arrive On Green	0.04	0.58	0.00	0.00	0.45	0.45	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3374	232	300	220	520	1411	0	1585
Grp Volume(v), veh/h	33	878	0	0	582	599	10	0	0	120	0	149
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1040	0	0	1411	0	1585
Q Serve(g_s), s	0.8	6.4	0.0	0.0	12.5	12.5	0.0	0.0	0.0	0.0	0.0	4.1
Cycle Q Clear(g_c), s	0.8	6.4	0.0	0.0	12.5	12.5	4.1	0.0	0.0	2.9	0.0	4.1
Prop In Lane	1.00		0.00	1.00		0.13	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	67	2062	0	4	792	815	277	0	0	400	0	245
V/C Ratio(X)	0.50	0.43	0.00	0.00	0.73	0.74	0.04	0.00	0.00	0.30	0.00	0.61
Avail Cap(c_a), veh/h	288	3612	0	211	1729	1780	1011	0	0	1114	0	1047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	5.4	0.0	0.0	10.6	10.6	16.7	0.0	0.0	17.8	0.0	18.3
Incr Delay (d2), s/veh	5.6	0.1	0.0	0.0	1.3	1.3	0.1	0.0	0.0	0.4	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	0.0	0.0	4.0	4.1	0.1	0.0	0.0	1.1	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	5.6	0.0	0.0	11.9	11.9	16.8	0.0	0.0	18.2	0.0	20.7
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	C
Approach Vol, veh/h		911			1181			10			269	
Approach Delay, s/veh		6.4			11.9			16.8			19.6	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	33.6		12.8	6.2	27.4		12.8
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32
Max Q Clear Time (g_c+I1), s	0.0	8.4		6.1	2.8	14.5		6.1
Green Ext Time (p_c), s	0.0	4.9		1.1	0.0	6.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

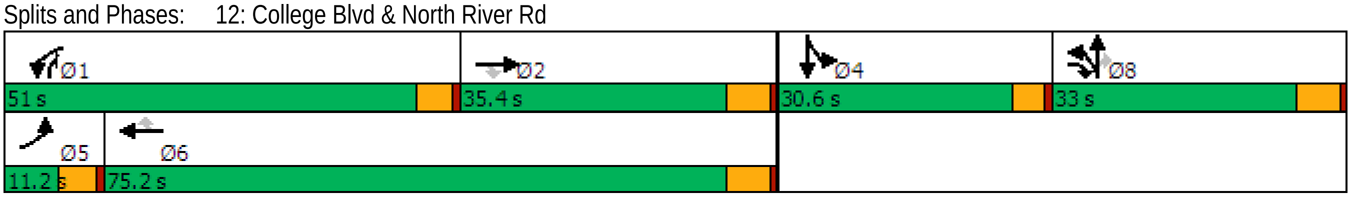
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	270	598	1400	655	90	30	1240	30	60
Future Volume (vph)	20	270	598	1400	655	90	30	1240	30	60
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.2	35.4	33.0	51.0	75.2	75.2	33.0	51.0	30.6	30.6
Total Split (%)	7.5%	23.6%	22.0%	34.0%	50.1%	50.1%	22.0%	34.0%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.1	16.7	45.7	46.6	62.2	62.2	27.6	80.2	11.9	11.9
Actuated g/C Ratio	0.05	0.14	0.37	0.38	0.51	0.51	0.23	0.66	0.10	0.10
v/c Ratio	0.25	0.60	0.86	1.16	0.39	0.12	1.03	0.63	0.19	0.42
Control Delay	69.0	55.8	28.1	115.8	21.2	5.2	100.2	6.6	54.5	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	55.8	28.1	115.8	21.2	5.2	100.2	6.6	54.5	56.4
LOS	E	E	C	F	C	A	F	A	D	E
Approach Delay		37.5			82.3		28.7			55.8
Approach LOS		D			F		C			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 121.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 55.1	Intersection LOS: E
Intersection Capacity Utilization 94.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	270	598	1400	655	90	352	30	1240	30	60	10
Future Volume (veh/h)	20	270	598	1400	655	90	352	30	1240	30	60	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	293	650	1522	712	98	383	33	1348	33	65	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	799	684	1205	1964	876	340	29	1549	103	90	15
Arrive On Green	0.02	0.22	0.22	0.35	0.55	0.55	0.21	0.21	0.21	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1646	142	2790	1781	1559	264
Grp Volume(v), veh/h	22	293	650	1522	712	98	416	0	1348	33	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1788	0	1395	1781	0	1823
Q Serve(g_s), s	1.6	9.2	29.6	45.9	14.8	3.9	27.2	0.0	27.2	2.3	0.0	5.4
Cycle Q Clear(g_c), s	1.6	9.2	29.6	45.9	14.8	3.9	27.2	0.0	27.2	2.3	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	37	799	684	1205	1964	876	369	0	1549	103	0	106
V/C Ratio(X)	0.59	0.37	0.95	1.26	0.36	0.11	1.13	0.00	0.87	0.32	0.00	0.72
Avail Cap(c_a), veh/h	83	799	684	1205	1964	876	369	0	1549	352	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.9	43.1	29.7	42.9	16.5	14.0	52.2	0.0	25.2	59.5	0.0	60.9
Incr Delay (d2), s/veh	13.8	0.3	22.9	125.2	0.1	0.1	85.5	0.0	5.7	1.8	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.1	26.2	40.3	6.0	1.4	21.0	0.0	18.7	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	43.4	52.6	168.0	16.6	14.1	137.8	0.0	30.8	61.3	0.0	69.7
LnGrp LOS	E	D	D	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		965			2332			1764			109	
Approach Delay, s/veh		50.4			115.3			56.1			67.2	
Approach LOS		D			F			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	51.0	35.4		12.2	7.9	78.5		33.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	45.9	29.6		26.0	6.1	69.4		27.2				
Max Q Clear Time (g_c+I1), s	47.9	31.6		7.4	3.6	16.8		29.2				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	4.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			82.0									
HCM 6th LOS			F									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	30	30	1562	1948	90
Future Volume (vph)	60	30	30	1562	1948	90
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.6	6.3	56.9	50.6	50.6
Actuated g/C Ratio	0.16	0.24	0.09	0.81	0.72	0.72
v/c Ratio	0.23	0.09	0.11	0.59	0.83	0.09
Control Delay	27.6	17.6	34.6	7.7	20.3	7.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.6	17.6	34.6	7.8	20.3	7.0
LOS	C	B	C	A	C	A
Approach Delay	24.2			8.3	19.7	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 70.5
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	30	30	1562	1948	90
Future Volume (veh/h)	60	30	30	1562	1948	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	33	33	1698	2117	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	182	228	143	2619	2192	978
Arrive On Green	0.10	0.10	0.04	0.74	0.62	0.62
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	65	33	33	1698	2117	98
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	2.2	1.2	0.6	15.6	36.6	1.6
Cycle Q Clear(g_c), s	2.2	1.2	0.6	15.6	36.6	1.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	182	228	143	2619	2192	978
V/C Ratio(X)	0.36	0.14	0.23	0.65	0.97	0.10
Avail Cap(c_a), veh/h	770	751	341	2831	2200	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	24.2	30.0	4.3	11.8	5.1
Incr Delay (d2), s/veh	1.2	0.3	0.8	0.5	12.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.3	3.2	14.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.3	24.5	30.8	4.8	23.9	5.1
LnGrp LOS	C	C	C	A	C	A
Approach Vol, veh/h	98			1731	2215	
Approach Delay, s/veh	27.0			5.3	23.1	
Approach LOS	C			A	C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	53.5	11.2	7.8	45.8
Change Period (Y+Rc), s	5.8	4.6	5.1	5.8
Max Green Setting (Gmax), s	51.6	28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s	17.6	4.2	2.6	38.6
Green Ext Time (p_c), s	12.8	0.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	209	10	100	20	50	20	1323	20	1720	248
Future Volume (vph)	209	10	100	20	50	20	1323	20	1720	248
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	62.6	10.7	63.2	63.2
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	9.2%	56.9%	9.7%	57.5%	57.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	22.3	22.3		22.3	22.3	5.1	58.1	5.7	58.3	58.3
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.05	0.61	0.06	0.61	0.61
v/c Ratio	0.81	0.29		0.47	0.12	0.23	0.48	0.21	0.86	0.27
Control Delay	57.4	12.1		37.2	3.8	54.1	12.5	52.2	23.1	8.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	4.4	0.0
Total Delay	57.4	12.1		37.2	3.8	54.1	12.5	52.2	27.5	8.5
LOS	E	B		D	A	D	B	D	C	A
Approach Delay		40.8		27.4			13.1		25.4	
Approach LOS		D		C			B		C	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 94.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	10	110	100	20	50	20	1323	40	20	1720	248
Future Volume (veh/h)	209	10	110	100	20	50	20	1323	40	20	1720	248
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	11	120	109	22	54	22	1438	43	22	1870	270
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	40	438	323	60	472	40	2723	81	40	1899	847
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.02	0.53	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1323	135	1471	876	200	1585	1781	5095	152	1781	3554	1585
Grp Volume(v), veh/h	227	0	131	131	0	54	22	961	520	22	1870	270
Grp Sat Flow(s),veh/h/ln	1323	0	1606	1077	0	1585	1781	1702	1843	1781	1777	1585
Q Serve(g_s), s	17.0	0.0	6.7	8.3	0.0	2.7	1.3	19.7	19.7	1.3	55.5	10.3
Cycle Q Clear(g_c), s	32.0	0.0	6.7	15.0	0.0	2.7	1.3	19.7	19.7	1.3	55.5	10.3
Prop In Lane	1.00		0.92	0.83		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	478	382	0	472	40	1819	985	40	1899	847
V/C Ratio(X)	0.82	0.00	0.27	0.34	0.00	0.11	0.55	0.53	0.53	0.55	0.98	0.32
Avail Cap(c_a), veh/h	276	0	478	382	0	472	83	1819	985	93	1899	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	28.8	34.0	0.0	27.4	52.0	16.2	16.2	52.0	24.6	14.0
Incr Delay (d2), s/veh	17.7	0.0	0.3	0.5	0.0	0.1	11.3	0.3	0.5	11.3	17.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	2.6	2.9	0.0	1.0	0.7	7.5	8.1	0.7	26.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	0.0	29.1	34.5	0.0	27.5	63.3	16.5	16.7	63.3	41.7	14.2
LnGrp LOS	E	A	C	C	A	C	E	B	B	E	D	B
Approach Vol, veh/h		358			185			1503			2162	
Approach Delay, s/veh		51.0			32.5			17.3			38.5	
Approach LOS		D			C			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	63.2		36.7	7.5	63.2		36.7				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	5.6	56.8		* 32	5.0	57.4		* 32				
Max Q Clear Time (g_c+I1), s	3.3	21.7		34.0	3.3	57.5		17.0				
Green Ext Time (p_c), s	0.0	8.9		0.0	0.0	0.0		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			31.7
HCM 6th LOS			C

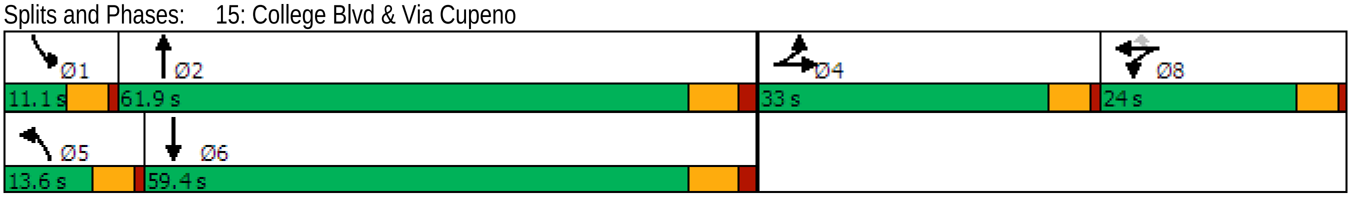
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	5	10	5	180	1314	5	1837
Future Volume (vph)	5	10	5	180	1314	5	1837
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	13.6	61.9	11.1	59.4
Total Split (%)	25.4%	18.5%	18.5%	10.5%	47.6%	8.5%	45.7%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.6	15.9	15.9	8.6	64.8	6.0	53.0
Actuated g/C Ratio	0.10	0.14	0.14	0.08	0.58	0.05	0.48
v/c Ratio	0.32	0.73	0.02	0.74	0.50	0.05	0.86
Control Delay	28.2	63.7	0.0	69.0	16.6	56.0	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	63.7	0.0	69.0	16.6	56.0	31.5
LOS	C	E	A	E	B	E	C
Approach Delay	28.2	62.0			22.7		31.5
Approach LOS	C	E			C		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 111.1	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	5	50	160	10	5	180	1314	50	5	1837	74
Future Volume (veh/h)	58	5	50	160	10	5	180	1314	50	5	1837	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	5	54	174	11	5	196	1428	54	5	1997	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	11	123	211	13	199	268	2780	105	14	2422	97
Arrive On Green	0.08	0.08	0.08	0.13	0.13	0.13	0.08	0.55	0.55	0.01	0.48	0.48
Sat Flow, veh/h	1736	139	1507	1680	106	1585	3456	5049	191	1781	5037	201
Grp Volume(v), veh/h	65	0	57	185	0	5	196	963	519	5	1348	729
Grp Sat Flow(s),veh/h/ln	1784	0	1599	1786	0	1585	1728	1702	1836	1781	1702	1834
Q Serve(g_s), s	3.2	0.0	3.2	9.5	0.0	0.3	5.2	16.6	16.6	0.3	31.8	32.0
Cycle Q Clear(g_c), s	3.2	0.0	3.2	9.5	0.0	0.3	5.2	16.6	16.6	0.3	31.8	32.0
Prop In Lane	0.97		0.94	0.94		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	146	0	131	224	0	199	268	1874	1011	14	1637	882
V/C Ratio(X)	0.44	0.00	0.44	0.82	0.00	0.03	0.73	0.51	0.51	0.36	0.82	0.83
Avail Cap(c_a), veh/h	534	0	479	363	0	322	314	2005	1081	114	1914	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	40.9	39.9	0.0	35.9	42.2	13.2	13.2	46.2	20.9	20.9
Incr Delay (d2), s/veh	2.1	0.0	2.3	7.9	0.0	0.1	7.1	0.2	0.4	14.9	2.7	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.3	4.6	0.0	0.1	2.5	6.0	6.5	0.2	12.4	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	43.2	47.8	0.0	35.9	49.3	13.4	13.6	61.1	23.5	25.9
LnGrp LOS	D	A	D	D	A	D	D	B	B	E	C	C
Approach Vol, veh/h		122			190			1678			2082	
Approach Delay, s/veh		43.1			47.5			17.7			24.4	
Approach LOS		D			D			B			C	

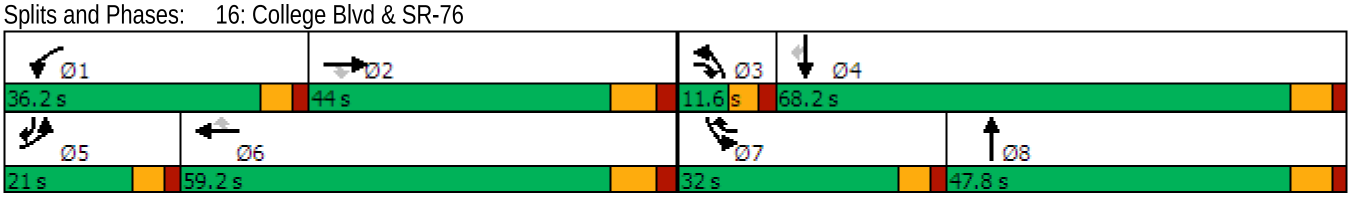
Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	58.3		12.7	12.3	51.8		16.8
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0
Max Green Setting (Gmax), s	6.0	55.1		28.0	8.5	52.6		19.0
Max Q Clear Time (g_c+I1), s	2.3	18.6		5.2	7.2	34.0		11.5
Green Ext Time (p_c), s	0.0	9.0		0.4	0.1	11.0		0.4

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	389	990	40	690	1710	585	70	579	662	937	458
Future Volume (vph)	389	990	40	690	1710	585	70	579	662	937	458
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	44.0	11.6	36.2	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.5%	7.3%	22.6%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	36.0	49.9	30.5	51.2	85.5	5.9	41.0	26.3	61.4	83.5
Actuated g/C Ratio	0.10	0.22	0.31	0.19	0.32	0.53	0.04	0.26	0.16	0.38	0.52
v/c Ratio	1.29	0.94	0.07	1.15	1.14	0.73	0.60	1.10	1.28	0.75	0.57
Control Delay	205.1	76.3	0.2	138.7	120.2	31.0	95.7	110.6	188.9	46.9	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	205.1	76.3	0.2	138.7	120.2	31.0	95.7	110.6	188.9	46.9	22.4
LOS	F	E	A	F	F	C	F	F	F	D	C
Approach Delay		109.5			107.0			109.6		87.2	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 102.4	Intersection LOS: F
Intersection Capacity Utilization 111.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	990	40	690	1710	585	70	579	340	662	937	458
Future Volume (veh/h)	389	990	40	690	1710	585	70	579	340	662	937	458
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	423	1076	43	750	1859	636	76	629	370	720	1018	498
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1149	409	659	1634	768	114	552	324	568	1377	766
Arrive On Green	0.10	0.22	0.22	0.19	0.32	0.32	0.03	0.26	0.26	0.16	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2153	1266	3456	3554	1585
Grp Volume(v), veh/h	423	1076	43	750	1859	636	76	519	480	720	1018	498
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1642	1728	1777	1585
Q Serve(g_s), s	15.3	33.1	3.3	30.5	51.2	51.2	3.5	41.0	41.0	26.3	39.3	37.9
Cycle Q Clear(g_c), s	15.3	33.1	3.3	30.5	51.2	51.2	3.5	41.0	41.0	26.3	39.3	37.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.77	1.00		1.00
Lane Grp Cap(c), veh/h	330	1149	409	659	1634	768	114	455	421	568	1377	766
V/C Ratio(X)	1.28	0.94	0.11	1.14	1.14	0.83	0.66	1.14	1.14	1.27	0.74	0.65
Avail Cap(c_a), veh/h	330	1149	409	659	1634	768	127	455	421	568	1377	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	60.9	45.3	64.8	54.4	35.5	76.5	59.5	59.5	66.9	42.1	31.2
Incr Delay (d2), s/veh	147.3	14.0	0.1	79.9	70.0	7.5	10.7	86.5	88.0	133.9	2.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	15.8	1.3	20.8	32.5	22.9	1.7	29.4	27.4	22.2	17.8	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	219.7	74.9	45.4	144.6	124.4	43.1	87.1	146.0	147.5	200.7	44.2	33.1
LnGrp LOS	F	E	D	F	F	D	F	F	F	F	D	C
Approach Vol, veh/h		1542			3245			1075			2236	
Approach Delay, s/veh		113.8			113.2			142.5			92.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.2	44.0	11.0	68.8	21.0	59.2	32.0	47.8
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	36.0	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	32.5	35.1	5.5	41.3	17.3	53.2	28.3	43.0
Green Ext Time (p_c), s	0.0	0.5	0.0	8.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	111.4
HCM 6th LOS	F

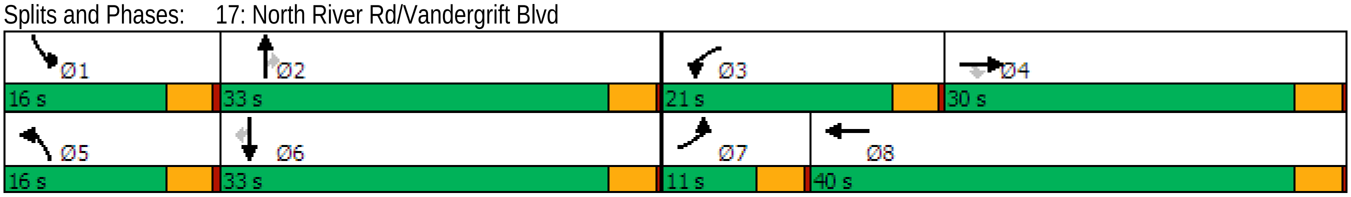
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	60	70	140	857	70	150	1030	380	140	898	50
Future Volume (vph)	60	70	140	857	70	150	1030	380	140	898	50
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	11.3	11.3	17.1	23.8	11.3	29.5	29.5	11.0	29.2	29.2
Actuated g/C Ratio	0.08	0.13	0.13	0.20	0.28	0.13	0.35	0.35	0.13	0.34	0.34
v/c Ratio	0.46	0.31	0.45	1.35	0.68	0.69	0.64	0.50	0.66	0.80	0.08
Control Delay	51.3	35.7	9.8	196.9	16.5	53.5	26.4	5.1	51.9	32.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	35.7	9.8	196.9	16.5	53.5	26.4	5.1	51.9	32.9	0.3
LOS	D	D	A	F	B	D	C	A	D	C	A
Approach Delay		25.7			138.5		23.8			33.9	
Approach LOS		C			F		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 85.1	
Natural Cycle: 110	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 61.3	Intersection LOS: E
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	70	140	857	70	340	150	1030	380	140	898	50
Future Volume (veh/h)	60	70	140	857	70	340	150	1030	380	140	898	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	76	152	932	76	370	163	1120	413	152	976	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	296	251	692	86	421	199	1776	551	187	1213	541
Arrive On Green	0.05	0.16	0.16	0.20	0.31	0.31	0.11	0.35	0.35	0.11	0.34	0.34
Sat Flow, veh/h	1781	1870	1585	3456	277	1350	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	65	76	152	932	0	446	163	1120	413	152	976	54
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1627	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.1	3.0	7.6	17.0	0.0	22.1	7.6	15.6	19.5	7.1	21.2	2.0
Cycle Q Clear(g_c), s	3.1	3.0	7.6	17.0	0.0	22.1	7.6	15.6	19.5	7.1	21.2	2.0
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	84	296	251	692	0	507	199	1776	551	187	1213	541
V/C Ratio(X)	0.78	0.26	0.61	1.35	0.00	0.88	0.82	0.63	0.75	0.81	0.80	0.10
Avail Cap(c_a), veh/h	147	572	485	692	0	690	252	1776	551	252	1213	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	31.4	33.3	34.0	0.0	27.7	36.9	23.1	24.4	37.2	25.4	19.1
Incr Delay (d2), s/veh	14.2	0.5	2.3	166.0	0.0	9.8	15.4	1.7	9.0	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.4	3.0	22.9	0.0	9.6	4.1	6.3	8.4	3.7	9.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	31.8	35.6	199.9	0.0	37.5	52.3	24.9	33.4	50.7	31.1	19.4
LnGrp LOS	D	C	D	F	A	D	D	C	C	D	C	B
Approach Vol, veh/h		293			1378			1696			1182	
Approach Delay, s/veh		38.8			147.4			29.6			33.1	
Approach LOS		D			F			C			C	

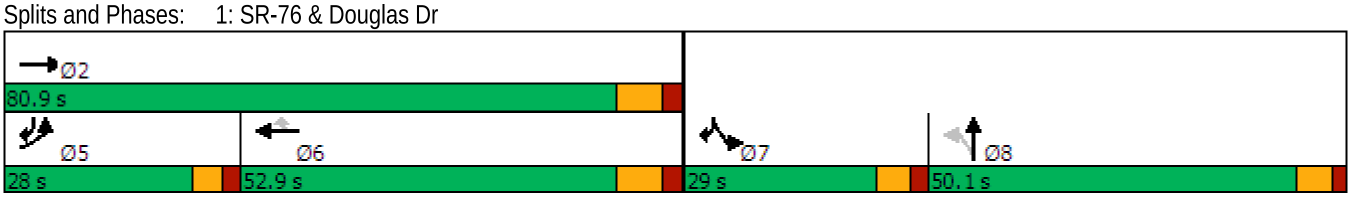
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	33.6	21.0	17.5	13.5	33.0	8.0	30.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	9.1	21.5	19.0	9.6	9.6	23.2	5.1	24.1
Green Ext Time (p_c), s	0.1	5.0	0.0	0.8	0.1	3.3	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	66.8
HCM 6th LOS	E

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	594	2070	1360	308	339	435	
Future Volume (vph)	594	2070	1360	308	339	435	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	80.9	52.9	52.9	29.0		50.1
Total Split (%)	17.5%	50.6%	33.1%	33.1%	18.1%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	72.9	44.9	44.9	22.9	51.3	
Actuated g/C Ratio	0.20	0.66	0.41	0.41	0.21	0.47	
v/c Ratio	0.93	0.96	1.02	0.40	1.00	0.31	
Control Delay	64.1	29.0	62.4	3.8	91.4	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	64.1	29.0	62.4	3.8	91.4	2.7	
LOS	E	C	E	A	F	A	
Approach Delay		36.8	51.6				
Approach LOS		D	D				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 42.3	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	594	2070	0	0	1360	308	0	0	0	339	0	435
Future Volume (veh/h)	594	2070	0	0	1360	308	0	0	0	339	0	435
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	646	2250	0	0	1478	335	0	0	0	368	0	473
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	699	2356	0	0	1453	648	0	2	0	372	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.21	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	368	
Grp Volume(v), veh/h	646	2250	0	0	1478	335	0	0	0	368	87.4	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	20.1	63.9	0.0	0.0	44.9	17.4	0.0	0.0	0.0	22.6		
Cycle Q Clear(g_c), s	20.1	63.9	0.0	0.0	44.9	17.4	0.0	0.0	0.0	22.6		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	699	2356	0	0	1453	648	0	2	0	372		
V/C Ratio(X)	0.92	0.95	0.00	0.00	1.02	0.52	0.00	0.00	0.00	0.99		
Avail Cap(c_a), veh/h	702	2359	0	0	1453	648	0	749	0	372		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	43.0	17.0	0.0	0.0	32.5	24.3	0.0	0.0	0.0	43.3		
Incr Delay (d2), s/veh	18.0	10.0	0.0	0.0	28.0	0.7	0.0	0.0	0.0	44.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.3	25.9	0.0	0.0	24.3	6.6	0.0	0.0	0.0	14.4		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	27.0	0.0	0.0	60.4	25.0	0.0	0.0	0.0	87.4		
LnGrp LOS	E	C	A	A	F	C	A	A	A	F		
Approach Vol, veh/h		2896			1813			0				
Approach Delay, s/veh		34.6			53.9			0.0				
Approach LOS		C			D							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		80.8			27.9	52.9	29.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		72.9			* 22	44.9	22.9	44.0				
Max Q Clear Time (g_c+I1), s		65.9			22.1	46.9	24.6	0.0				
Green Ext Time (p_c), s		5.9			0.1	0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		45.3
HCM 6th LOS		D

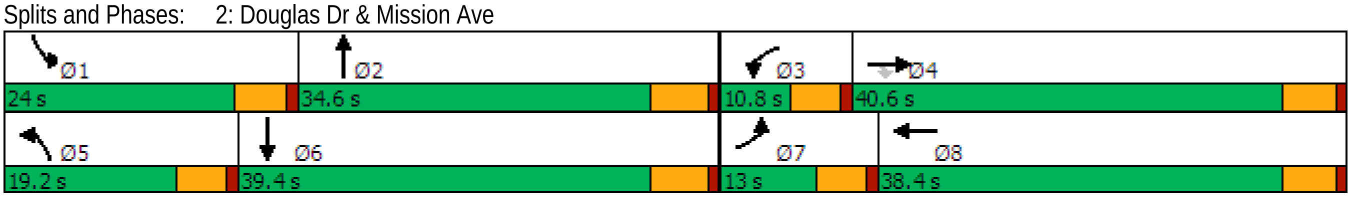
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	276	750	170	70	410	190	672	350	574
Future Volume (vph)	276	750	170	70	410	190	672	350	574
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.0	40.6	40.6	10.8	38.4	19.2	34.6	24.0	39.4
Total Split (%)	11.8%	36.9%	36.9%	9.8%	34.9%	17.5%	31.5%	21.8%	35.8%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.0	29.8	29.8	5.8	27.6	14.0	26.0	19.1	31.0
Actuated g/C Ratio	0.08	0.29	0.29	0.06	0.27	0.14	0.25	0.19	0.30
v/c Ratio	1.12	0.79	0.33	0.77	0.85	0.86	0.85	1.15	0.64
Control Delay	136.9	39.7	10.4	94.5	34.6	76.2	46.8	136.8	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.9	39.7	10.4	94.5	34.6	76.2	46.8	136.8	34.1
LOS	F	D	B	F	C	E	D	F	C
Approach Delay		58.0			39.3		53.0		70.7
Approach LOS		E			D		D		E

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 102.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 55.8	Intersection LOS: E
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	750	170	70	410	418	190	672	30	350	574	58
Future Volume (veh/h)	276	750	170	70	410	418	190	672	30	350	574	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	300	815	185	76	446	454	207	730	33	380	624	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1158	516	96	542	483	237	825	37	319	927	93
Arrive On Green	0.07	0.33	0.33	0.05	0.30	0.30	0.13	0.24	0.24	0.18	0.28	0.28
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3463	156	1781	3259	329
Grp Volume(v), veh/h	300	815	185	76	446	454	207	374	389	380	340	347
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1842	1781	1777	1811
Q Serve(g_s), s	7.9	21.2	9.4	4.4	24.6	29.4	12.0	21.5	21.5	18.9	17.9	17.9
Cycle Q Clear(g_c), s	7.9	21.2	9.4	4.4	24.6	29.4	12.0	21.5	21.5	18.9	17.9	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	259	1158	516	96	542	483	237	423	439	319	505	515
V/C Ratio(X)	1.16	0.70	0.36	0.79	0.82	0.94	0.87	0.88	0.89	1.19	0.67	0.67
Avail Cap(c_a), veh/h	259	1186	529	96	556	496	238	485	503	319	566	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	31.1	27.1	49.3	34.0	35.7	44.9	38.8	38.8	43.3	33.4	33.4
Incr Delay (d2), s/veh	105.9	1.9	0.4	34.5	9.5	25.7	28.0	16.1	15.7	112.7	2.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	9.2	3.6	2.9	11.9	14.6	7.1	11.1	11.5	18.2	8.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.7	33.0	27.6	83.8	43.5	61.4	72.9	54.8	54.5	156.0	36.1	36.1
LnGrp LOS	F	C	C	F	D	E	E	D	D	F	D	D
Approach Vol, veh/h		1300			976			970			1067	
Approach Delay, s/veh		60.3			55.0			58.5			78.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	30.9	10.8	39.8	19.1	35.8	13.0	37.6
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	18.9	28.8	5.7	35.2	14.1	33.6	7.9	33.0
Max Q Clear Time (g_c+I1), s	20.9	23.5	6.4	23.2	14.0	19.9	9.9	31.4
Green Ext Time (p_c), s	0.0	1.6	0.0	4.0	0.0	2.5	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	63.3
HCM 6th LOS	E

Notes

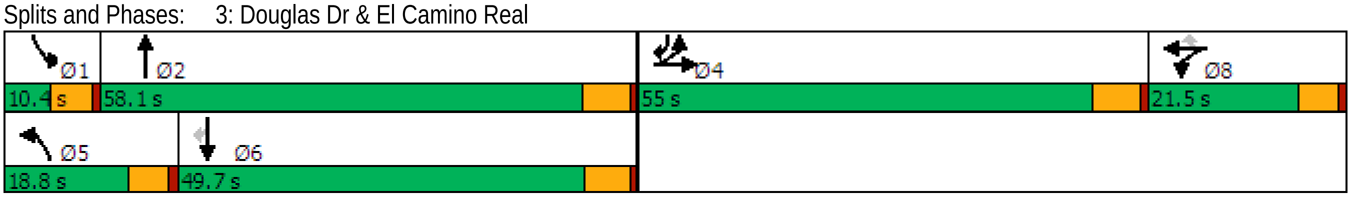
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1135	70	80	30	10	110	1125	10	812	711
Future Volume (vph)	1135	70	80	30	10	110	1125	10	812	711
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	55.0	55.0		21.5	21.5	18.8	58.1	10.4	49.7	55.0
Total Split (%)	37.9%	37.9%		14.8%	14.8%	13.0%	40.1%	7.2%	34.3%	37.9%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	48.9	48.9	137.1	12.4	12.4	12.4	53.9	5.0	40.2	95.1
Actuated g/C Ratio	0.36	0.36	1.00	0.09	0.09	0.09	0.39	0.04	0.29	0.69
v/c Ratio	1.01	0.11	0.05	0.60	0.04	0.75	0.94	0.17	0.85	0.40
Control Delay	71.5	32.1	0.1	76.6	0.3	89.1	54.0	73.3	55.1	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.5	32.1	0.1	76.6	0.3	89.1	54.0	73.3	55.1	10.0
LOS	E	C	A	E	A	F	D	E	E	A
Approach Delay		64.9		68.9			56.9		34.3	
Approach LOS		E		E			E		C	

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 137.1
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 51.4 Intersection LOS: D
Intersection Capacity Utilization 91.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1135	70	80	60	30	10	110	1125	70	10	812	711
Future Volume (veh/h)	1135	70	80	60	30	10	110	1125	70	10	812	711
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1234	76	0	65	33	11	120	1223	76	11	883	773
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1271	688		82	42	108	144	1276	79	22	1090	1882
Arrive On Green	0.37	0.37	0.00	0.07	0.07	0.07	0.08	0.63	0.38	0.01	0.31	0.31
Sat Flow, veh/h	3456	1870	1585	1201	610	1585	1781	3398	211	1781	3554	2790
Grp Volume(v), veh/h	1234	76	0	98	0	11	120	639	660	11	883	773
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1832	1781	1777	1395
Q Serve(g_s), s	46.5	3.5	0.0	7.1	0.0	0.9	8.8	44.5	45.0	0.8	30.4	16.5
Cycle Q Clear(g_c), s	46.5	3.5	0.0	7.1	0.0	0.9	8.8	44.5	45.0	0.8	30.4	16.5
Prop In Lane	1.00		1.00	0.66		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	1271	688		124	0	108	144	667	688	22	1090	1882
V/C Ratio(X)	0.97	0.11		0.79	0.00	0.10	0.83	0.96	0.96	0.49	0.81	0.41
Avail Cap(c_a), veh/h	1273	689		219	0	191	180	696	718	67	1172	1946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	27.6	0.0	60.8	0.0	57.9	60.0	23.7	25.7	65.0	42.3	9.7
Incr Delay (d2), s/veh	18.6	0.1	0.0	10.7	0.0	0.4	22.5	23.7	23.7	15.7	4.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	1.6	0.0	3.6	0.0	0.4	4.9	18.6	20.3	0.5	13.9	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	27.7	0.0	71.5	0.0	58.3	82.4	47.4	49.4	80.7	46.5	9.8
LnGrp LOS	E	C		E	A	E	F	D	D	F	D	A
Approach Vol, veh/h		1310	A		109			1419			1667	
Approach Delay, s/veh		57.9			70.1			51.3			29.7	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	55.9		54.9	16.1	46.9		14.6				
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5				
Max Green Setting (Gmax), s	5.0	51.9		48.8	13.4	* 44		16.0				
Max Q Clear Time (g_c+I1), s	2.8	47.0		48.5	10.8	32.4		9.1				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.1	6.6		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		45.7
HCM 6th LOS		D

Notes

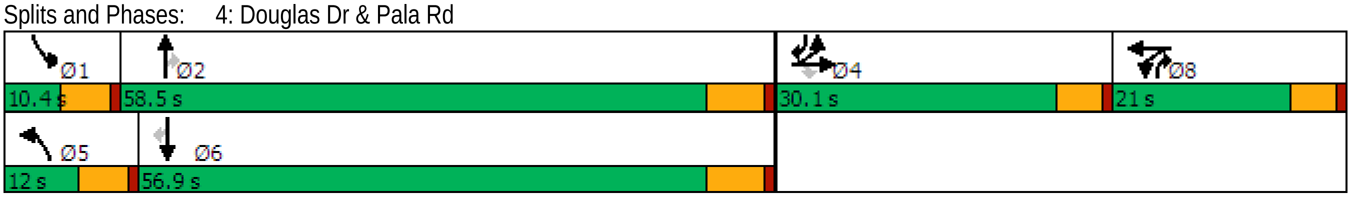
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	5	110	20	5	110	2040	30	20	1403	120
Future Volume (vph)	110	5	110	20	5	110	2040	30	20	1403	120
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	12.0	58.5	21.0	10.4	56.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.0%	48.8%	17.5%	8.7%	47.4%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	7.0	7.0	6.7	59.1	67.8	5.1	50.7	68.0
Actuated g/C Ratio	0.12	0.12	0.12	0.07	0.07	0.07	0.62	0.72	0.05	0.53	0.72
v/c Ratio	0.33	0.31	0.41	0.17	0.26	0.96	1.00	0.03	0.23	0.81	0.11
Control Delay	43.5	43.0	10.8	48.1	23.0	119.5	41.8	0.3	53.8	24.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	43.0	10.8	48.1	23.0	119.5	41.8	0.3	53.8	24.4	1.1
LOS	D	D	B	D	C	F	D	A	D	C	A
Approach Delay		27.4			32.2		45.2			22.9	
Approach LOS		C			C		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.8	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	5	110	20	5	30	110	2040	30	20	1403	120
Future Volume (veh/h)	110	5	110	20	5	30	110	2040	30	20	1403	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	0	120	22	5	33	120	2217	33	22	1525	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	0	167	92	11	73	130	2056	999	42	1880	1005
Arrive On Green	0.11	0.00	0.11	0.05	0.05	0.05	0.07	0.97	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	124	0	120	22	0	38	120	2217	33	22	1525	130
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	32.0	3.0
Cycle Q Clear(g_c), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	32.0	3.0
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	0	167	92	0	84	130	2056	999	42	1880	1005
V/C Ratio(X)	0.33	0.00	0.72	0.24	0.00	0.45	0.92	1.08	0.03	0.53	0.81	0.13
Avail Cap(c_a), veh/h	985	0	438	313	0	284	130	2056	999	99	1993	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	39.1	41.2	0.0	41.6	41.7	1.5	6.3	43.7	17.6	6.6
Incr Delay (d2), s/veh	0.5	0.0	5.7	1.3	0.0	3.8	55.8	44.8	0.0	9.9	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	2.8	0.5	0.0	0.9	4.6	13.5	0.3	0.6	12.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	44.8	42.5	0.0	45.5	97.5	46.4	6.3	53.5	20.1	6.6
LnGrp LOS	D	A	D	D	A	D	F	F	A	D	C	A
Approach Vol, veh/h		244			60			2370			1677	
Approach Delay, s/veh		41.4			44.4			48.4			19.5	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	58.5		14.6	12.0	54.0		9.8
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.0	52.3		25.0	6.6	50.7		15.9
Max Q Clear Time (g_c+I1), s	3.1	54.3		8.6	8.1	34.0		4.1
Green Ext Time (p_c), s	0.0	0.0		0.9	0.0	8.6		0.1

Intersection Summary		
HCM 6th Ctrl Delay		36.8
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	10	5	90	50	5	5	1960	100	5	1333	90
Future Volume (vph)	10	5	90	50	5	5	1960	100	5	1333	90
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	83.0	83.0	10.4	93.4	93.4
Total Split (%)	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	63.8%	63.8%	8.0%	71.8%	71.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.6	12.6		12.6	12.6	80.9	80.9	5.1	82.6	82.6
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.76	0.76	0.05	0.77	0.77
v/c Ratio		0.09	0.39		0.37	0.02	0.79	0.09	0.06	0.53	0.08
Control Delay		39.9	17.9		47.5	0.2	13.7	3.5	54.4	6.6	3.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		39.9	17.9		47.5	0.2	13.7	3.5	54.4	6.6	3.3
LOS		D	B		D	A	B	A	D	A	A
Approach Delay		20.9			43.8		13.2			6.6	
Approach LOS		C			D		B			A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 106.6	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

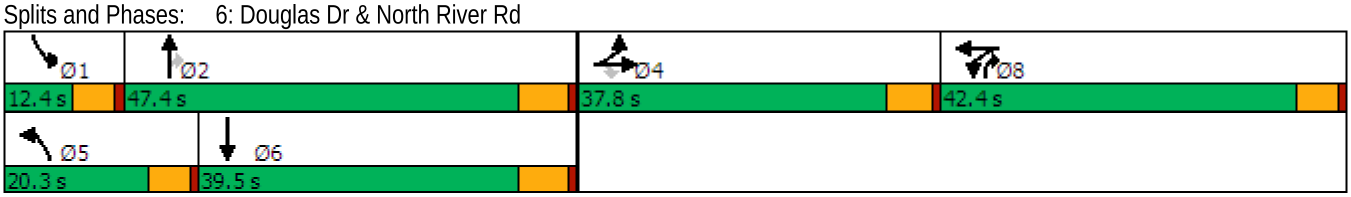
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	90	50	5	5	0	1960	100	5	1333	90
Future Volume (veh/h)	10	5	90	50	5	5	0	1960	100	5	1333	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	98	54	5	5	0	2130	109	5	1449	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	56	17	399	70	4	399	0	2161	964	11	2338	1043
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.61	0.61	0.01	0.66	0.66
Sat Flow, veh/h	27	67	1585	58	16	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	16	0	98	59	0	5	0	2130	109	5	1449	98
Grp Sat Flow(s),veh/h/ln	94	0	1585	74	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.3	0.0	6.1	1.5	0.0	0.3	0.0	73.0	3.6	0.3	29.4	2.8
Cycle Q Clear(g_c), s	30.8	0.0	6.1	31.3	0.0	0.3	0.0	73.0	3.6	0.3	29.4	2.8
Prop In Lane	0.69		1.00	0.92		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	399	74	0	399	0	2161	964	11	2338	1043
V/C Ratio(X)	0.22	0.00	0.25	0.80	0.00	0.01	0.00	0.99	0.11	0.45	0.62	0.09
Avail Cap(c_a), veh/h	80	0	407	81	0	407	0	2176	971	71	2473	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	0.0	37.2	60.6	0.0	35.0	0.0	23.9	10.3	61.7	12.3	7.8
Incr Delay (d2), s/veh	1.5	0.0	0.3	38.6	0.0	0.0	0.0	15.9	0.1	25.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.4	2.7	0.0	0.1	0.0	33.2	1.3	0.2	11.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	37.5	99.2	0.0	35.0	0.0	39.8	10.3	87.3	12.8	7.8
LnGrp LOS	D	A	D	F	A	D	A	D	B	F	B	A
Approach Vol, veh/h		114			64			2239			1552	
Approach Delay, s/veh		37.9			94.2			38.4			12.7	
Approach LOS		D			F			D			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	82.7		36.3		88.9		36.3				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	76.3		32.0		86.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	75.0		32.8		31.4		33.3				
Green Ext Time (p_c), s	0.0	1.1		0.0		11.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			29.2
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	108	80	613	69	170	780	900	50	670
Future Volume (vph)	40	108	80	613	69	170	780	900	50	670
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.3	47.4	42.4	12.4	39.5
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.5%	33.9%	30.3%	8.9%	28.2%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.5	13.5	13.5	35.2	35.2	15.1	43.3	80.6	6.9	32.4
Actuated g/C Ratio	0.11	0.11	0.11	0.30	0.30	0.13	0.36	0.68	0.06	0.27
v/c Ratio	0.21	0.29	0.28	0.70	0.48	0.83	0.66	0.45	0.53	0.82
Control Delay	50.3	50.1	2.2	47.8	36.9	81.3	37.3	1.4	77.3	49.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	50.1	2.2	47.8	36.9	81.3	37.3	1.4	77.3	49.3
LOS	D	D	A	D	D	F	D	A	E	D
Approach Delay		33.3			41.5		23.9			51.2
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 119.2	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



6: Douglas Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	108	80	613	69	50	170	780	900	50	670	50
Future Volume (veh/h)	40	108	80	613	69	50	170	780	900	50	670	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	117	87	666	75	54	185	848	978	54	728	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	318	142	889	252	182	220	1369	1770	71	1011	75
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.12	0.39	0.39	0.04	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	3563	1011	728	1781	3554	2790	1781	3354	249
Grp Volume(v), veh/h	43	117	87	666	0	129	185	848	978	54	386	396
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1739	1781	1777	1395	1781	1777	1826
Q Serve(g_s), s	2.2	3.0	5.1	16.7	0.0	5.8	9.8	18.6	19.0	2.9	18.7	18.7
Cycle Q Clear(g_c), s	2.2	3.0	5.1	16.7	0.0	5.8	9.8	18.6	19.0	2.9	18.7	18.7
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	159	318	142	889	0	434	220	1369	1770	71	536	550
V/C Ratio(X)	0.27	0.37	0.61	0.75	0.00	0.30	0.84	0.62	0.55	0.76	0.72	0.72
Avail Cap(c_a), veh/h	591	1179	526	1366	0	667	275	1517	1887	129	613	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	41.4	42.3	33.4	0.0	29.4	41.4	24.0	9.9	45.9	30.1	30.1
Incr Delay (d2), s/veh	1.3	1.0	6.0	1.8	0.0	0.5	17.1	1.1	0.6	15.6	5.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.3	2.2	7.3	0.0	2.5	5.3	7.8	10.4	1.6	8.5	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	42.4	48.3	35.3	0.0	29.9	58.5	25.1	10.5	61.5	35.1	35.0
LnGrp LOS	D	D	D	D	A	C	E	C	B	E	D	C
Approach Vol, veh/h		247			795			2011			836	
Approach Delay, s/veh		44.4			34.4			21.1			36.7	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	43.4		14.4	17.3	35.3		29.5				
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4				
Max Green Setting (Gmax), s	7.0	41.2		32.0	14.9	33.3		37.0				
Max Q Clear Time (g_c+I1), s	4.9	21.0		7.1	11.8	20.7		18.7				
Green Ext Time (p_c), s	0.0	16.1		1.5	0.2	5.3		5.4				

Intersection Summary			
HCM 6th Ctrl Delay			28.6
HCM 6th LOS			C

Notes

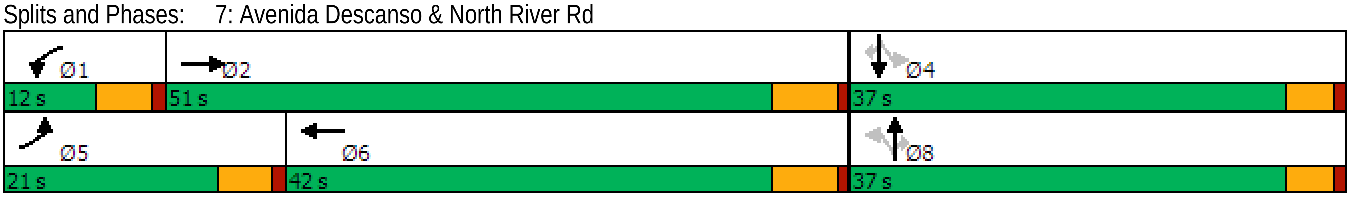
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	150	1008	30	732	5	5	40	100	5	90
Future Volume (vph)	150	1008	30	732	5	5	40	100	5	90
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	51.0	12.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	51.0%	12.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	11.7	37.0	6.8	23.6		13.2	13.2		13.2	13.2
Actuated g/C Ratio	0.18	0.57	0.10	0.36		0.20	0.20		0.20	0.20
v/c Ratio	0.51	0.56	0.18	0.72		0.03	0.10		0.42	0.23
Control Delay	34.6	12.9	37.0	22.5		23.1	0.5		29.2	2.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	34.6	12.9	37.0	22.5		23.1	0.5		29.2	2.9
LOS	C	B	D	C		C	A		C	A
Approach Delay		15.7		23.0		4.7			17.0	
Approach LOS		B		C		A			B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 65.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 58.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1008	20	30	732	110	5	5	40	100	5	90
Future Volume (veh/h)	150	1008	20	30	732	110	5	5	40	100	5	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	1096	22	33	796	120	5	5	43	109	5	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	1384	28	57	950	143	66	46	621	88	2	621
Arrive On Green	0.11	0.39	0.39	0.03	0.31	0.31	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3563	72	1781	3096	467	2	117	1585	7	6	1585
Grp Volume(v), veh/h	163	547	571	33	457	459	10	0	43	114	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1786	119	0	1585	13	0	1585
Q Serve(g_s), s	7.4	22.4	22.5	1.5	19.8	19.8	0.1	0.0	1.4	0.2	0.0	3.3
Cycle Q Clear(g_c), s	7.4	22.4	22.5	1.5	19.8	19.8	32.4	0.0	1.4	32.4	0.0	3.3
Prop In Lane	1.00		0.04	1.00		0.26	0.50		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	202	690	721	57	545	548	112	0	621	90	0	621
V/C Ratio(X)	0.81	0.79	0.79	0.58	0.84	0.84	0.09	0.00	0.07	1.26	0.00	0.16
Avail Cap(c_a), veh/h	343	972	1016	149	779	783	112	0	622	91	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	22.3	22.3	39.4	26.7	26.7	20.9	0.0	15.7	40.6	0.0	16.3
Incr Delay (d2), s/veh	7.3	3.0	2.9	8.9	5.6	5.6	0.3	0.0	0.0	180.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	9.4	9.8	0.8	8.9	8.9	0.1	0.0	0.5	6.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	25.3	25.2	48.4	32.3	32.3	21.3	0.0	15.7	221.2	0.0	16.4
LnGrp LOS	D	C	C	D	C	C	C	A	B	F	A	B
Approach Vol, veh/h		1281			949			53			212	
Approach Delay, s/veh		27.5			32.8			16.8			126.5	
Approach LOS		C			C			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	37.9		37.0	14.5	31.2		37.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	6.9	45.2		32.4	15.9	36.2		32.4				
Max Q Clear Time (g_c+I1), s	3.5	24.5		34.4	9.4	21.8		34.4				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.3	3.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			37.7									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	1148	842	20	5	20
Future Vol, veh/h	30	1148	842	20	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	1248	915	22	5	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	937	0	-	0	1616	469
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	690	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	727	-	-	-	94	541
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	459	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	727	-	-	-	90	541
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	459	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	727	-	-	-	270
HCM Lane V/C Ratio	0.045	-	-	-	0.101
HCM Control Delay (s)	10.2	-	-	-	19.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1220	0	0	900	20	0	0	0	20	0	10
Future Vol, veh/h	30	1220	0	0	900	20	0	0	0	20	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1326	0	0	978	22	0	0	0	22	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1000	0	0	1326	0	0	-	-	663	1718	2381	500
Stage 1	-	-	-	-	-	-	-	-	-	989	989	-
Stage 2	-	-	-	-	-	-	-	-	-	729	1392	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	688	-	-	517	-	-	0	0	404	58	34	516
Stage 1	-	-	-	-	-	-	0	0	-	265	323	-
Stage 2	-	-	-	-	-	-	0	0	-	380	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	688	-	-	517	-	-	-	-	404	56	32	516
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	56	32	-
Stage 1	-	-	-	-	-	-	-	-	-	252	323	-
Stage 2	-	-	-	-	-	-	-	-	-	362	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	78
HCM LOS			A	F

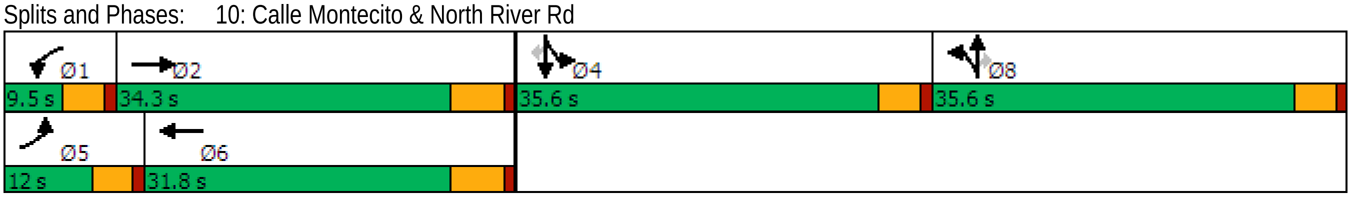
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	688	-	-	517	-	-	80
HCM Lane V/C Ratio	-	0.047	-	-	-	-	-	0.408
HCM Control Delay (s)	0	10.5	-	-	0	-	-	78
HCM Lane LOS	A	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	1.6

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	160	982	10	688	5	40	5	80
Future Volume (vph)	160	982	10	688	5	40	5	80
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.2	5.2	27.1	10.4	10.4	15.0	15.0
Actuated g/C Ratio	0.10	0.48	0.06	0.34	0.13	0.13	0.19	0.19
v/c Ratio	1.02	0.64	0.10	0.86	0.17	0.14	0.57	0.23
Control Delay	114.8	22.6	45.1	35.2	32.9	1.0	37.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.8	22.6	45.1	35.2	32.9	1.0	37.5	5.1
LOS	F	C	D	D	C	A	D	A
Approach Delay		35.4		35.3	16.0		27.3	
Approach LOS		D		D	B		C	

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 80.4
Natural Cycle: 135
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 33.9 Intersection LOS: C
Intersection Capacity Utilization 64.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	982	10	10	688	240	30	5	40	170	5	80
Future Volume (veh/h)	160	982	10	10	688	240	30	5	40	170	5	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1067	11	11	748	261	33	5	43	185	5	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	1599	16	25	882	308	145	22	147	259	7	237
Arrive On Green	0.12	0.44	0.44	0.01	0.34	0.34	0.09	0.09	0.09	0.15	0.15	0.15
Sat Flow, veh/h	1781	3603	37	1781	2584	901	1557	236	1585	1737	47	1585
Grp Volume(v), veh/h	174	526	552	11	514	495	38	0	43	190	0	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1708	1793	0	1585	1784	0	1585
Q Serve(g_s), s	6.2	15.1	15.1	0.4	17.3	17.3	1.3	0.0	1.6	6.6	0.0	3.2
Cycle Q Clear(g_c), s	6.2	15.1	15.1	0.4	17.3	17.3	1.3	0.0	1.6	6.6	0.0	3.2
Prop In Lane	1.00		0.02	1.00		0.53	0.87		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	207	788	827	25	607	583	167	0	147	266	0	237
V/C Ratio(X)	0.84	0.67	0.67	0.45	0.85	0.85	0.23	0.00	0.29	0.71	0.00	0.37
Avail Cap(c_a), veh/h	207	788	827	138	718	690	860	0	761	856	0	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	14.2	14.2	31.6	19.7	19.7	27.1	0.0	27.3	26.2	0.0	24.7
Incr Delay (d2), s/veh	25.5	2.2	2.1	12.1	8.2	8.5	0.7	0.0	1.1	3.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	5.8	6.0	0.2	7.9	7.6	0.6	0.0	0.6	2.9	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	16.4	16.3	43.7	27.9	28.2	27.8	0.0	28.4	29.7	0.0	25.7
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1252			1020			81			277	
Approach Delay, s/veh		21.5			28.3			28.1			28.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	34.4		14.2	12.0	27.7		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0				
Max Q Clear Time (g_c+I1), s	2.4	17.1		8.6	8.2	19.3		3.6				
Green Ext Time (p_c), s	0.0	3.9		1.1	0.0	2.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.0									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	125	1077	859	60	0		
Future Volume (vph)	125	1077	859	60	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	19.0	54.9	45.4	35.6	35.6	9.5	35.6
Total Split (%)	19.0%	54.9%	45.4%	35.6%	35.6%	10%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	11.0	38.2	26.3	11.5	11.5		
Actuated g/C Ratio	0.17	0.60	0.41	0.18	0.18		
v/c Ratio	0.44	0.55	0.70	0.26	0.20		
Control Delay	34.6	9.0	20.4	28.0	0.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	34.6	9.0	20.4	28.0	0.9		
LOS	C	A	C	C	A		
Approach Delay		11.7	20.4		11.8		
Approach LOS		B	C		B		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 63.6
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.3 — Intersection LOS: B
Intersection Capacity Utilization 53.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: Redondo Dr & North River Rd

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1077	0	0	859	80	0	0	0	60	0	89
Future Volume (veh/h)	125	1077	0	0	859	80	0	0	0	60	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	1171	0	0	934	87	0	0	0	65	0	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	2114	0	4	1291	120	0	249	0	396	0	211
Arrive On Green	0.10	0.59	0.00	0.00	0.39	0.39	0.00	0.00	0.00	0.13	0.00	0.13
Sat Flow, veh/h	1781	3647	0	1781	3286	306	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	136	1171	0	0	505	516	0	0	0	65	0	97
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1815	0	1870	0	1781	0	1585
Q Serve(g_s), s	3.4	9.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	1.5	0.0	2.6
Cycle Q Clear(g_c), s	3.4	9.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	1.5	0.0	2.6
Prop In Lane	1.00		0.00	1.00		0.17	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	2114	0	4	698	713	0	249	0	396	0	211
V/C Ratio(X)	0.75	0.55	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.16	0.00	0.46
Avail Cap(c_a), veh/h	572	3793	0	197	1523	1556	0	1284	0	1343	0	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	5.5	0.0	0.0	11.6	11.6	0.0	0.0	0.0	17.6	0.0	18.1
Incr Delay (d2), s/veh	6.0	0.2	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.0	0.0	0.0	3.6	3.7	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	5.8	0.0	0.0	13.1	13.0	0.0	0.0	0.0	17.8	0.0	19.7
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	B
Approach Vol, veh/h		1307			1021			0			162	
Approach Delay, s/veh		7.8			13.0			0.0			18.9	
Approach LOS		A			B						B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	33.6		11.6	9.1	24.4		11.6
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.0	48.2		30.0	14.5	38.7		* 31
Max Q Clear Time (g_c+I1), s	0.0	11.0		4.6	5.4	12.9		0.0
Green Ext Time (p_c), s	0.0	7.2		0.6	0.3	4.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

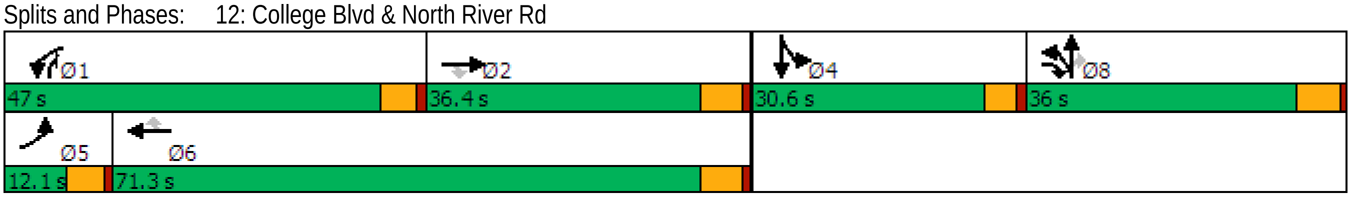
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	560	506	1320	468	70	40	1520	30	50
Future Volume (vph)	30	560	506	1320	468	70	40	1520	30	50
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	12.1	36.4	36.0	47.0	71.3	71.3	36.0	47.0	30.6	30.6
Total Split (%)	8.1%	24.3%	24.0%	31.3%	47.5%	47.5%	24.0%	31.3%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	26.7	58.7	42.4	67.4	67.4	30.5	78.8	11.6	11.6
Actuated g/C Ratio	0.05	0.21	0.45	0.33	0.52	0.52	0.23	0.61	0.09	0.09
v/c Ratio	0.37	0.84	0.62	1.28	0.28	0.09	1.15	0.84	0.21	0.36
Control Delay	76.1	61.7	10.7	171.9	20.4	3.3	136.6	17.6	59.1	60.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	61.7	10.7	171.9	20.4	3.3	136.6	17.6	59.1	60.0
LOS	E	E	B	F	C	A	F	B	E	E
Approach Delay		38.5			127.4		44.4			59.7
Approach LOS		D			F		D			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 130.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 74.2	Intersection LOS: E
Intersection Capacity Utilization 98.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	560	506	1320	468	70	402	40	1520	30	50	5
Future Volume (veh/h)	30	560	506	1320	468	70	402	40	1520	30	50	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	609	550	1435	509	76	437	43	1652	33	54	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	835	740	1112	1884	840	378	37	1545	85	80	7
Arrive On Green	0.03	0.24	0.24	0.32	0.53	0.53	0.23	0.23	0.23	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1629	160	2790	1781	1686	156
Grp Volume(v), veh/h	33	609	550	1435	509	76	480	0	1652	33	0	59
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1789	0	1395	1781	0	1842
Q Serve(g_s), s	2.4	20.6	30.6	41.9	10.2	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Cycle Q Clear(g_c), s	2.4	20.6	30.6	41.9	10.2	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	48	835	740	1112	1884	840	415	0	1545	85	0	87
V/C Ratio(X)	0.69	0.73	0.74	1.29	0.27	0.09	1.16	0.00	1.07	0.39	0.00	0.67
Avail Cap(c_a), veh/h	96	835	740	1112	1884	840	415	0	1545	356	0	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.8	46.0	26.6	44.1	16.8	15.1	50.0	0.0	29.0	60.2	0.0	61.0
Incr Delay (d2), s/veh	16.4	3.2	4.1	137.4	0.1	0.0	94.4	0.0	43.9	2.9	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.5	19.1	39.0	4.2	1.1	24.3	0.0	32.3	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.2	49.2	30.7	181.5	16.8	15.1	144.4	0.0	72.9	63.1	0.0	69.7
LnGrp LOS	E	D	C	F	B	B	F	A	F	E	A	E
Approach Vol, veh/h		1192			2020			2132			92	
Approach Delay, s/veh		41.5			133.8			89.0			67.3	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	47.0	36.4		10.8	8.6	74.8		36.0
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8
Max Green Setting (Gmax), s	41.9	30.6		26.0	7.0	65.5		30.2
Max Q Clear Time (g_c+I1), s	43.9	32.6		6.1	4.4	12.2		32.2
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	2.8		0.0

Intersection Summary			
HCM 6th Ctrl Delay			94.9
HCM 6th LOS			F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	100	120	1972	1726	70
Future Volume (vph)	30	100	120	1972	1726	70
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	17.1	6.6	68.2	53.8	53.8
Actuated g/C Ratio	0.14	0.21	0.08	0.83	0.66	0.66
v/c Ratio	0.13	0.33	0.47	0.73	0.81	0.07
Control Delay	31.2	25.6	43.9	9.7	17.3	6.0
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	31.2	25.6	43.9	10.1	17.3	6.0
LOS	C	C	D	B	B	A
Approach Delay	26.9			12.0	16.9	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 82	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

LOS Engineering, Inc.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	120	1972	1726	70
Future Volume (veh/h)	30	100	120	1972	1726	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	109	130	2143	1876	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	185	285	264	2678	2157	962
Arrive On Green	0.10	0.10	0.08	0.75	0.61	0.61
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	33	109	130	2143	1876	76
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.2	4.4	2.6	27.3	32.0	1.4
Cycle Q Clear(g_c), s	1.2	4.4	2.6	27.3	32.0	1.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	185	285	264	2678	2157	962
V/C Ratio(X)	0.18	0.38	0.49	0.80	0.87	0.08
Avail Cap(c_a), veh/h	685	731	309	3007	2440	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	26.3	32.3	5.6	11.9	5.9
Incr Delay (d2), s/veh	0.5	0.8	1.4	1.5	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	1.1	6.2	11.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	27.1	33.7	7.0	15.3	5.9
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	142			2273	1952	
Approach Delay, s/veh	27.8			8.6	14.9	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		60.7		12.1	10.7	50.0
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		29.3		6.4	4.6	34.0
Green Ext Time (p_c), s		18.2		0.5	0.1	10.2
Intersection Summary						
HCM 6th Ctrl Delay			12.0			
HCM 6th LOS			B			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	178	20	60	10	40	90	1854	50	1677	139
Future Volume (vph)	178	20	60	10	40	90	1854	50	1677	139
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	11.9	62.1	11.2	61.4	61.4
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	10.8%	56.5%	10.2%	55.8%	55.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	19.9	19.9		19.9	19.9	6.8	59.1	6.0	55.9	55.9
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.07	0.60	0.06	0.57	0.57
v/c Ratio	0.72	0.29		0.29	0.11	0.80	0.70	0.50	0.91	0.16
Control Delay	52.0	11.1		35.2	2.2	88.9	17.0	63.5	28.2	7.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	11.8	0.0
Total Delay	52.0	11.1		35.2	2.2	88.9	17.0	63.5	40.0	7.3
LOS	D	B		D	A	F	B	E	D	A
Approach Delay		36.3		23.3			20.2		38.2	
Approach LOS		D		C			C		D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 98.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	20	90	60	10	40	90	1854	100	50	1677	139
Future Volume (veh/h)	178	20	90	60	10	40	90	1854	100	50	1677	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	22	98	65	11	43	98	2015	109	54	1823	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	79	353	299	46	420	114	2723	147	70	1862	830
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.06	0.55	0.55	0.04	0.52	0.52
Sat Flow, veh/h	1350	299	1332	890	173	1585	1781	4959	267	1781	3554	1585
Grp Volume(v), veh/h	193	0	120	76	0	43	98	1381	743	54	1823	151
Grp Sat Flow(s),veh/h/ln	1350	0	1631	1063	0	1585	1781	1702	1822	1781	1777	1585
Q Serve(g_s), s	14.8	0.0	6.2	4.6	0.0	2.2	5.8	32.6	32.9	3.2	53.2	5.3
Cycle Q Clear(g_c), s	25.5	0.0	6.2	10.7	0.0	2.2	5.8	32.6	32.9	3.2	53.2	5.3
Prop In Lane	1.00		0.82	0.86		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	289	0	432	345	0	420	114	1869	1000	70	1862	830
V/C Ratio(X)	0.67	0.00	0.28	0.22	0.00	0.10	0.86	0.74	0.74	0.78	0.98	0.18
Avail Cap(c_a), veh/h	339	0	492	394	0	478	114	1869	1000	102	1863	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	30.9	34.5	0.0	29.5	49.1	18.1	18.2	50.5	24.7	13.3
Incr Delay (d2), s/veh	4.0	0.0	0.3	0.3	0.0	0.1	43.9	1.6	3.0	19.5	16.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	2.5	1.7	0.0	0.8	4.0	12.5	13.9	1.8	25.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	0.0	31.3	34.9	0.0	29.6	93.0	19.7	21.2	70.0	40.8	13.4
LnGrp LOS	D	A	C	C	A	C	F	B	C	E	D	B
Approach Vol, veh/h		313			119			2222			2028	
Approach Delay, s/veh		41.1			32.9			23.5			39.5	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	64.0		32.8	11.9	61.4		32.8				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.1	56.3		* 32	6.8	55.6		* 32				
Max Q Clear Time (g_c+I1), s	5.2	34.9		27.5	7.8	55.2		12.7				
Green Ext Time (p_c), s	0.0	12.3		0.5	0.0	0.4		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			31.8
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	10	10	530	1761	5	1540
Future Volume (vph)	10	10	10	530	1761	5	1540
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	31.0	81.9	11.1	62.0
Total Split (%)	22.0%	16.0%	16.0%	20.7%	54.6%	7.4%	41.3%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	26.8	13.1	13.1	25.9	84.2	6.0	55.3
Actuated g/C Ratio	0.19	0.09	0.09	0.18	0.59	0.04	0.39
v/c Ratio	0.91	0.60	0.04	0.93	0.69	0.07	0.94
Control Delay	66.9	78.0	0.3	80.0	23.1	70.4	53.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	78.0	0.3	80.0	23.1	70.4	53.1
LOS	E	E	A	F	C	E	D
Approach Delay	66.9	70.1			35.6		53.2
Approach LOS	E	E			D		D

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 143.1	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 46.3	Intersection LOS: D
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	333	10	230	80	10	10	530	1761	120	5	1540	147
Future Volume (veh/h)	333	10	230	80	10	10	530	1761	120	5	1540	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	362	11	250	87	11	11	576	1914	130	5	1674	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	14	312	110	14	109	627	2736	185	14	1830	175
Arrive On Green	0.20	0.20	0.20	0.07	0.07	0.07	0.18	0.56	0.56	0.01	0.39	0.39
Sat Flow, veh/h	1781	67	1528	1590	201	1585	3456	4884	331	1781	4741	452
Grp Volume(v), veh/h	362	0	261	98	0	11	576	1332	712	5	1201	633
Grp Sat Flow(s),veh/h/ln	1781	0	1595	1791	0	1585	1728	1702	1811	1781	1702	1789
Q Serve(g_s), s	27.9	0.0	21.4	7.4	0.0	0.9	22.5	38.8	39.2	0.4	46.0	46.2
Cycle Q Clear(g_c), s	27.9	0.0	21.4	7.4	0.0	0.9	22.5	38.8	39.2	0.4	46.0	46.2
Prop In Lane	1.00		0.96	0.89		1.00	1.00		0.18	1.00		0.25
Lane Grp Cap(c), veh/h	363	0	325	123	0	109	627	1907	1014	14	1314	691
V/C Ratio(X)	1.00	0.00	0.80	0.79	0.00	0.10	0.92	0.70	0.70	0.37	0.91	0.92
Avail Cap(c_a), veh/h	363	0	325	248	0	219	652	1907	1014	78	1368	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	0.0	52.0	63.0	0.0	59.9	55.2	21.8	21.9	67.8	40.0	40.0
Incr Delay (d2), s/veh	46.2	0.0	13.5	10.9	0.0	0.4	17.7	1.1	2.2	16.0	9.4	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	0.0	9.8	3.8	0.0	0.4	11.3	15.5	16.9	0.2	20.8	23.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.9	0.0	65.5	73.8	0.0	60.3	72.9	23.0	24.1	83.8	49.4	56.3
LnGrp LOS	F	A	E	E	A	E	E	C	C	F	D	E
Approach Vol, veh/h		623			109			2620			1839	
Approach Delay, s/veh		86.0			72.5			34.3			51.9	
Approach LOS		F			E			C			D	

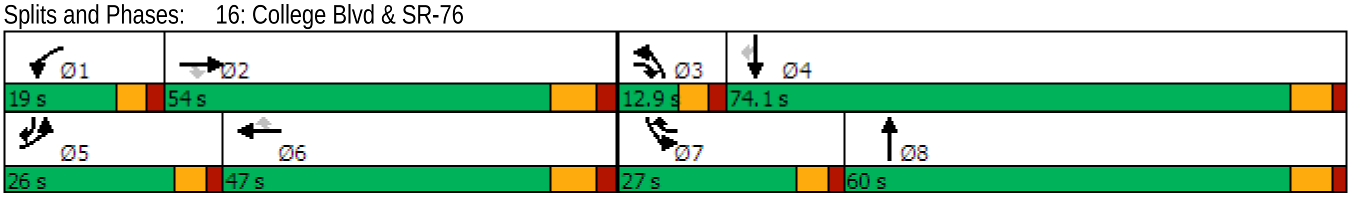
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	83.7		33.0	30.0	59.8		14.5				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	75.1		28.0	25.9	55.2		19.0				
Max Q Clear Time (g_c+I1), s	2.4	41.2		29.9	24.5	48.2		9.4				
Green Ext Time (p_c), s	0.0	14.7		0.0	0.5	4.9		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			47.5
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	688	1650	70	410	1120	770	60	923	681	920	539
Future Volume (vph)	688	1650	70	410	1120	770	60	923	681	920	539
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	26.0	54.0	12.9	19.0	47.0	27.0	12.9	60.0	27.0	74.1	26.0
Total Split (%)	16.3%	33.8%	8.1%	11.9%	29.4%	16.9%	8.1%	37.5%	16.9%	46.3%	16.3%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	20.3	46.0	61.0	13.3	39.0	68.3	7.0	53.2	21.3	67.5	94.6
Actuated g/C Ratio	0.13	0.29	0.38	0.08	0.24	0.43	0.04	0.33	0.13	0.42	0.59
v/c Ratio	1.72	1.23	0.11	1.56	0.98	1.14	0.43	1.29	1.62	0.67	0.61
Control Delay	371.6	155.4	2.4	314.4	81.2	115.0	83.7	178.3	329.2	40.1	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	371.6	155.4	2.4	314.4	81.2	115.0	83.7	178.3	329.2	40.1	21.1
LOS	F	F	A	F	F	F	F	F	F	D	C
Approach Delay		212.8			134.1			174.4		127.3	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.72	
Intersection Signal Delay: 162.2	Intersection LOS: F
Intersection Capacity Utilization 124.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	688	1650	70	410	1120	770	60	923	450	681	920	539
Future Volume (veh/h)	688	1650	70	410	1120	770	60	923	450	681	920	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	748	1793	76	446	1217	837	65	1003	489	740	1000	586
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1468	503	287	1245	597	102	776	370	460	1550	892
Arrive On Green	0.13	0.29	0.29	0.08	0.24	0.24	0.03	0.33	0.33	0.13	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2335	1112	3456	3554	1585
Grp Volume(v), veh/h	748	1793	76	446	1217	837	65	758	734	740	1000	586
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1670	1728	1777	1585
Q Serve(g_s), s	20.3	46.0	5.5	13.3	37.9	39.0	3.0	53.2	53.2	21.3	35.3	41.0
Cycle Q Clear(g_c), s	20.3	46.0	5.5	13.3	37.9	39.0	3.0	53.2	53.2	21.3	35.3	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	438	1468	503	287	1245	597	102	591	555	460	1550	892
V/C Ratio(X)	1.71	1.22	0.15	1.55	0.98	1.40	0.64	1.28	1.32	1.61	0.65	0.66
Avail Cap(c_a), veh/h	438	1468	503	287	1245	597	156	591	555	460	1550	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	57.0	39.2	73.3	60.1	49.8	76.8	53.4	53.4	69.3	35.4	24.2
Incr Delay (d2), s/veh	327.3	106.0	0.1	265.2	20.3	190.5	6.4	139.6	157.4	283.8	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.9	34.2	2.2	16.5	18.7	55.4	1.4	46.6	46.6	27.6	15.6	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	397.2	163.0	39.3	338.5	80.4	240.3	83.2	193.0	210.8	353.2	36.3	26.0
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h		2617			2500			1557			2326	
Approach Delay, s/veh		226.3			180.0			196.8			134.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	54.0	10.4	76.6	26.0	47.0	27.0	60.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 13	46.0	* 7.2	67.3	* 20	39.0	* 21	53.2
Max Q Clear Time (g_c+I1), s	15.3	48.0	5.0	43.0	22.3	41.0	23.3	55.2
Green Ext Time (p_c), s	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	184.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	90	110	160	589	140	290	875	965	330	1129	70
Future Volume (vph)	90	110	160	589	140	290	875	965	330	1129	70
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	16.0	30.0	30.0	21.0	35.0	23.0	47.0	47.0	22.0	46.0	46.0
Total Split (%)	13.3%	25.0%	25.0%	17.5%	29.2%	19.2%	39.2%	39.2%	18.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	10.3	16.3	16.3	17.1	23.0	19.1	43.2	43.2	18.1	42.2	42.2
Actuated g/C Ratio	0.09	0.15	0.15	0.15	0.21	0.17	0.39	0.39	0.16	0.38	0.38
v/c Ratio	0.59	0.44	0.46	1.21	0.78	1.03	0.48	1.13	1.24	0.91	0.11
Control Delay	64.6	47.2	10.0	151.8	50.4	106.6	27.1	91.6	174.9	44.4	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	47.2	10.0	151.8	50.4	106.6	27.1	91.6	174.9	44.4	1.6
LOS	E	D	A	F	D	F	C	F	F	D	A
Approach Delay		35.0			119.2		67.1			70.7	
Approach LOS		D			F		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.6	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 75.1	Intersection LOS: E
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	110	160	589	140	140	290	875	965	330	1129	70
Future Volume (veh/h)	90	110	160	589	140	140	290	875	965	330	1129	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	120	174	640	152	152	315	951	1049	359	1227	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	251	213	541	190	190	312	2023	628	295	1375	613
Arrive On Green	0.07	0.13	0.13	0.16	0.22	0.22	0.18	0.40	0.40	0.17	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	3456	858	858	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	98	120	174	640	0	304	315	951	1049	359	1227	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1716	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	5.9	6.4	11.6	17.0	0.0	18.2	19.0	15.0	43.0	18.0	35.1	3.4
Cycle Q Clear(g_c), s	5.9	6.4	11.6	17.0	0.0	18.2	19.0	15.0	43.0	18.0	35.1	3.4
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	251	213	541	0	380	312	2023	628	295	1375	613
V/C Ratio(X)	0.79	0.48	0.82	1.18	0.00	0.80	1.01	0.47	1.67	1.22	0.89	0.12
Avail Cap(c_a), veh/h	197	448	380	541	0	490	312	2023	628	295	1375	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	43.5	45.7	45.8	0.0	40.0	44.8	24.3	32.8	45.3	31.2	21.4
Incr Delay (d2), s/veh	10.8	1.4	7.6	99.9	0.0	7.1	53.6	0.8	308.8	123.9	9.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.1	5.0	14.7	0.0	8.4	13.0	6.1	69.8	18.0	16.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	44.9	53.3	145.7	0.0	47.1	98.4	25.1	341.6	169.1	40.3	21.8
LnGrp LOS	E	D	D	F	A	D	F	C	F	F	D	C
Approach Vol, veh/h		392			944			2315			1662	
Approach Delay, s/veh		52.5			113.9			178.5			67.3	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	47.0	21.0	18.6	23.0	46.0	11.5	28.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	18.0	43.0	17.0	26.0	19.0	42.0	12.0	31.0				
Max Q Clear Time (g_c+I1), s	20.0	45.0	19.0	13.6	21.0	37.1	7.9	20.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	3.4	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			122.9									
HCM 6th LOS			F									

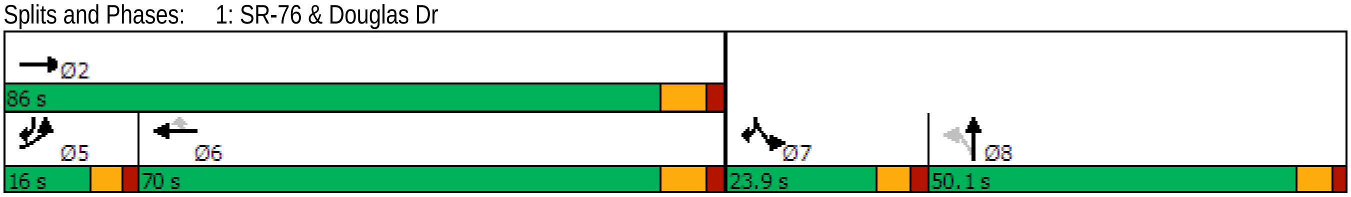
Appendix S

Horizon Year 2035 Alternative + Project Intersection LOS Worksheets

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	300	1130	2200	240	290	620	
Future Volume (vph)	300	1130	2200	240	290	620	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	10.3	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	16.0	33.0	33.0	33.0	22.1		50.1
Total Split (s)	16.0	86.0	70.0	70.0	23.9		50.1
Total Split (%)	10.0%	53.8%	43.8%	43.8%	14.9%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	10.3	78.0	62.0	62.0	17.8	34.2	
Actuated g/C Ratio	0.09	0.71	0.56	0.56	0.16	0.31	
v/c Ratio	1.02	0.49	1.20	0.26	1.10	0.51	
Control Delay	104.1	7.9	119.2	3.1	126.7	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	104.1	7.9	119.2	3.1	126.7	4.5	
LOS	F	A	F	A	F	A	
Approach Delay		28.1	107.7				
Approach LOS		C	F				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 71.7	Intersection LOS: E
Intersection Capacity Utilization 100.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1130	0	0	2200	240	0	0	0	290	0	620
Future Volume (veh/h)	300	1130	0	0	2200	240	0	0	0	290	0	620
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	326	1228	0	0	2391	261	0	0	0	315	0	674
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	324	2522	0	0	2005	894	0	2	0	289	0	0
Arrive On Green	0.09	0.71	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.16	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	315	
Grp Volume(v), veh/h	326	1228	0	0	2391	261	0	0	0	315	125.8	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	10.3	16.8	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Cycle Q Clear(g_c), s	10.3	16.8	0.0	0.0	62.0	9.4	0.0	0.0	0.0	17.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	324	2522	0	0	2005	894	0	2	0	289		
V/C Ratio(X)	1.01	0.49	0.00	0.00	1.19	0.29	0.00	0.00	0.00	1.09		
Avail Cap(c_a), veh/h	324	2522	0	0	2005	894	0	749	0	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	49.8	7.1	0.0	0.0	23.9	12.5	0.0	0.0	0.0	46.1		
Incr Delay (d2), s/veh	51.7	0.1	0.0	0.0	91.9	0.2	0.0	0.0	0.0	79.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	5.7	0.0	0.0	49.5	3.3	0.0	0.0	0.0	14.2		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.5	7.2	0.0	0.0	115.9	12.7	0.0	0.0	0.0	125.8		
LnGrp LOS	F	A	A	A	F	B	A	A	A	F		
Approach Vol, veh/h		1554			2652			0				
Approach Delay, s/veh		27.0			105.7			0.0				
Approach LOS		C			F							
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		86.0			16.0	70.0	23.9	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		78.0			* 10	62.0	17.8	44.0				
Max Q Clear Time (g_c+I1), s		18.8			12.3	64.0	19.8	0.0				
Green Ext Time (p_c), s		8.1			0.0	0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		80.1
HCM 6th LOS		F

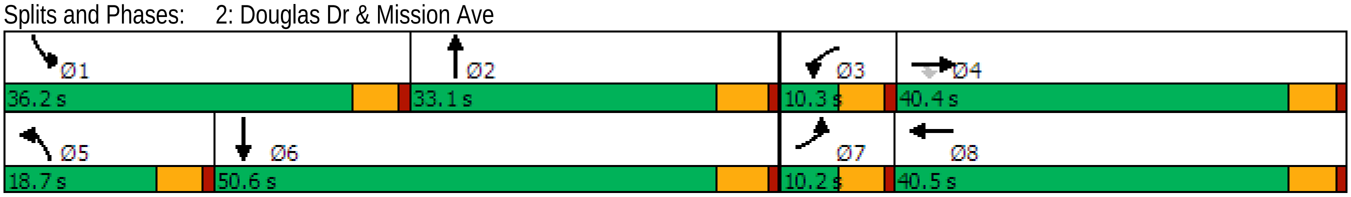
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	80	320	70	60	540	130	370	450	830
Future Volume (vph)	80	320	70	60	540	130	370	450	830
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	10.2	40.4	40.4	10.3	40.5	18.7	33.1	36.2	50.6
Total Split (%)	8.5%	33.7%	33.7%	8.6%	33.8%	15.6%	27.6%	30.2%	42.2%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.2	31.0	31.0	5.3	33.7	12.4	20.3	31.5	39.5
Actuated g/C Ratio	0.05	0.28	0.28	0.05	0.31	0.11	0.18	0.29	0.36
v/c Ratio	0.54	0.35	0.13	0.77	0.90	0.71	0.63	0.96	0.79
Control Delay	67.2	32.6	0.5	104.6	43.5	69.0	46.0	73.3	37.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	32.6	0.5	104.6	43.5	69.0	46.0	73.3	37.5
LOS	E	C	A	F	D	E	D	E	D
Approach Delay		33.7			47.2		51.8		49.3
Approach LOS		C			D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 46.9	Intersection LOS: D
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	320	70	60	540	390	130	370	10	450	830	90
Future Volume (veh/h)	80	320	70	60	540	390	130	370	10	450	830	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	348	76	65	587	424	141	402	11	489	902	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	1128	503	83	631	456	174	503	14	516	1080	117
Arrive On Green	0.04	0.32	0.32	0.05	0.32	0.32	0.10	0.14	0.14	0.29	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	1781	1969	1422	1781	3533	97	1781	3233	351
Grp Volume(v), veh/h	87	348	76	65	530	481	141	202	211	489	496	504
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1614	1781	1777	1853	1781	1777	1807
Q Serve(g_s), s	2.6	7.8	3.6	3.8	30.3	30.3	8.2	11.6	11.6	28.3	27.1	27.1
Cycle Q Clear(g_c), s	2.6	7.8	3.6	3.8	30.3	30.3	8.2	11.6	11.6	28.3	27.1	27.1
Prop In Lane	1.00		1.00	1.00		0.88	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	151	1128	503	83	570	518	174	253	264	516	594	604
V/C Ratio(X)	0.57	0.31	0.15	0.78	0.93	0.93	0.81	0.80	0.80	0.95	0.83	0.83
Avail Cap(c_a), veh/h	168	1183	528	88	593	539	230	461	481	527	757	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	27.1	25.7	49.6	34.6	34.6	46.5	43.6	43.7	36.5	32.3	32.3
Incr Delay (d2), s/veh	3.9	0.2	0.1	33.5	20.9	22.5	14.6	5.7	5.6	26.3	6.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.3	1.4	2.5	16.1	14.9	4.3	5.4	5.7	15.8	12.5	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	27.3	25.9	83.0	55.5	57.0	61.1	49.4	49.2	62.9	38.8	38.7
LnGrp LOS	D	C	C	F	E	E	E	D	D	E	D	D
Approach Vol, veh/h		511			1076			554			1489	
Approach Delay, s/veh		31.5			57.9			52.3			46.7	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.6	20.8	10.0	38.8	15.4	40.9	9.7	39.1
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4
Max Green Setting (Gmax), s	31.1	27.3	5.2	35.0	13.6	44.8	5.1	35.1
Max Q Clear Time (g_c+I1), s	30.3	13.6	5.8	9.8	10.2	29.1	4.6	32.3
Green Ext Time (p_c), s	0.2	1.4	0.0	1.9	0.1	4.1	0.0	1.4

Intersection Summary			
HCM 6th Ctrl Delay			48.7
HCM 6th LOS			D

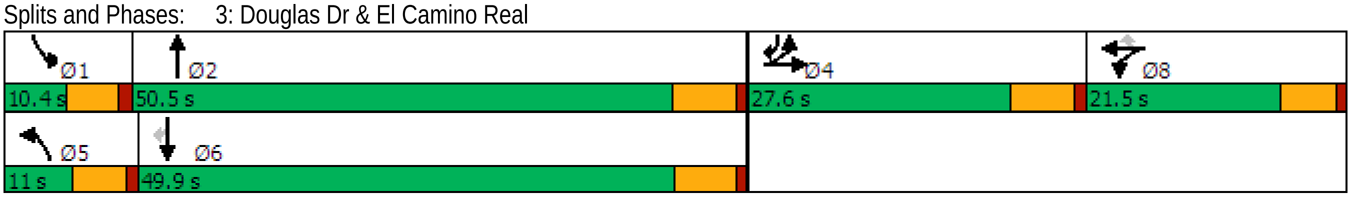
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	390	20	50	40	5	60	670	10	1280	1300
Future Volume (vph)	390	20	50	40	5	60	670	10	1280	1300
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	27.6	27.6		21.5	21.5	11.0	50.5	10.4	49.9	27.6
Total Split (%)	25.1%	25.1%		19.5%	19.5%	10.0%	45.9%	9.5%	45.4%	25.1%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	20.5	20.5	102.3	12.3	12.3	5.7	49.4	5.1	43.1	69.7
Actuated g/C Ratio	0.20	0.20	1.00	0.12	0.12	0.06	0.48	0.05	0.42	0.68
v/c Ratio	0.62	0.06	0.03	0.60	0.02	0.66	0.45	0.13	0.93	0.74
Control Delay	42.9	36.2	0.0	56.0	0.0	82.2	19.4	53.4	42.0	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	36.2	0.0	56.0	0.0	82.2	19.4	53.4	42.0	14.9
LOS	D	D	A	E	A	F	B	D	D	B
Approach Delay		38.0		53.9			24.3		28.4	
Approach LOS		D		D			C		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 102.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	20	50	80	40	5	60	670	40	10	1280	1300
Future Volume (veh/h)	390	20	50	80	40	5	60	670	40	10	1280	1300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	424	22	0	87	43	5	65	728	43	11	1391	1413
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	532	288		111	55	145	84	1687	100	24	1639	1716
Arrive On Green	0.15	0.15	0.00	0.09	0.09	0.09	0.05	0.49	0.49	0.01	0.46	0.46
Sat Flow, veh/h	3456	1870	1585	1211	599	1585	1781	3410	201	1781	3554	2790
Grp Volume(v), veh/h	424	22	0	130	0	5	65	379	392	11	1391	1413
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1834	1781	1777	1395
Q Serve(g_s), s	11.2	1.0	0.0	6.6	0.0	0.3	3.4	12.9	13.0	0.6	32.7	37.3
Cycle Q Clear(g_c), s	11.2	1.0	0.0	6.6	0.0	0.3	3.4	12.9	13.0	0.6	32.7	37.3
Prop In Lane	1.00		1.00	0.67		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	532	288		165	0	145	84	879	907	24	1639	1716
V/C Ratio(X)	0.80	0.08		0.79	0.00	0.03	0.78	0.43	0.43	0.47	0.85	0.82
Avail Cap(c_a), veh/h	783	424		307	0	269	106	879	907	94	1653	1727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	34.2	0.0	42.0	0.0	39.1	44.5	15.3	15.3	46.2	22.5	14.2
Incr Delay (d2), s/veh	3.6	0.1	0.0	8.0	0.0	0.1	24.1	0.3	0.3	13.6	4.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.4	0.0	3.3	0.0	0.1	2.1	5.1	5.2	0.3	13.8	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	34.3	0.0	50.0	0.0	39.2	68.6	15.7	15.6	59.8	26.9	17.5
LnGrp LOS	D	C		D	A	D	E	B	B	E	C	B
Approach Vol, veh/h		446	A		135			836			2815	
Approach Delay, s/veh		41.7			49.6			19.8			22.3	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	52.9		20.7	9.8	49.7		14.1
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	44.3		21.4	5.6	* 44		16.0
Max Q Clear Time (g_c+I1), s	2.6	15.0		13.2	5.4	39.3		8.6
Green Ext Time (p_c), s	0.0	3.4		1.4	0.0	4.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	80	5	110	20	5	50	1030	20	20	2270	80
Future Volume (vph)	80	5	110	20	5	50	1030	20	20	2270	80
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	82.4	21.0	11.5	83.5	30.1
Total Split (%)	20.8%	20.8%	20.8%	14.5%	14.5%	7.2%	56.8%	14.5%	7.9%	57.6%	20.8%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	7.2	7.2	5.0	82.1	90.0	6.0	78.2	95.4
Actuated g/C Ratio	0.09	0.09	0.09	0.06	0.06	0.04	0.68	0.75	0.05	0.65	0.79
v/c Ratio	0.30	0.30	0.47	0.21	0.30	0.74	0.47	0.02	0.25	1.08	0.07
Control Delay	56.5	56.4	15.0	62.1	28.3	109.1	12.5	0.1	66.5	66.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	56.4	15.0	62.1	28.3	109.1	12.5	0.1	66.5	66.5	1.0
LOS	E	E	B	E	C	F	B	A	E	E	A
Approach Delay		33.0			40.7		16.6			64.3	
Approach LOS		C			D		B			E	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 120.8	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.2	Intersection LOS: D
Intersection Capacity Utilization 88.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	5	110	20	5	30	50	1030	20	20	2270	80
Future Volume (veh/h)	80	5	110	20	5	30	50	1030	20	20	2270	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	0	120	22	5	33	54	1120	22	22	2467	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	153	77	9	61	69	2339	1111	39	2277	1169
Arrive On Green	0.10	0.00	0.10	0.04	0.04	0.04	0.04	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	91	0	120	22	0	38	54	1120	22	22	2467	87
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	8.9	1.4	0.0	2.8	3.6	19.0	0.5	1.5	77.3	1.8
Cycle Q Clear(g_c), s	2.9	0.0	8.9	1.4	0.0	2.8	3.6	19.0	0.5	1.5	77.3	1.8
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	153	77	0	70	69	2339	1111	39	2277	1169
V/C Ratio(X)	0.26	0.00	0.78	0.29	0.00	0.55	0.78	0.48	0.02	0.57	1.08	0.07
Avail Cap(c_a), veh/h	738	0	328	235	0	213	74	2339	1111	90	2277	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	53.3	55.9	0.0	56.6	57.4	10.3	5.5	58.5	21.7	4.4
Incr Delay (d2), s/veh	0.4	0.0	8.5	2.0	0.0	6.5	38.0	0.2	0.0	12.6	45.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.9	0.7	0.0	1.3	2.4	7.1	0.2	0.8	43.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	0.0	61.8	57.9	0.0	63.1	95.5	10.4	5.5	71.1	67.6	4.4
LnGrp LOS	D	A	E	E	A	E	F	B	A	E	F	A
Approach Vol, veh/h		211			60			1196			2576	
Approach Delay, s/veh		57.1			61.2			14.2			65.5	
Approach LOS		E			E			B			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	85.6		16.7	10.1	83.5		10.3				
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1				
Max Green Setting (Gmax), s	6.1	76.2		25.0	5.0	77.3		15.9				
Max Q Clear Time (g_c+I1), s	3.5	21.0		10.9	5.6	79.3		4.8				
Green Ext Time (p_c), s	0.0	7.1		0.7	0.0	0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			49.8									
HCM 6th LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	20	5	130	80	5	10	1120	40	5	2170	40
Future Volume (vph)	20	5	130	80	5	10	1120	40	5	2170	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	73.0	73.0	10.4	83.4	83.4
Total Split (%)	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	60.8%	60.8%	8.7%	69.5%	69.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		14.7	14.7		14.7	14.7	78.2	78.2	5.0	80.0	80.0
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.74	0.74	0.05	0.75	0.75
v/c Ratio		0.14	0.48		0.50	0.04	0.47	0.04	0.06	0.88	0.04
Control Delay		38.3	22.8		49.4	0.2	8.4	1.5	52.8	16.8	4.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.3	22.8		49.4	0.2	8.4	1.5	52.8	16.8	4.0
LOS		D	C		D	A	A	A	D	B	A
Approach Delay		25.3			44.2		8.2			16.7	
Approach LOS		C			D		A			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.1	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Douglas Dr & Rainer Way

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	130	80	5	10	0	1120	40	5	2170	40
Future Volume (veh/h)	20	5	130	80	5	10	0	1120	40	5	2170	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	5	141	87	5	11	0	1217	43	5	2359	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	54	7	423	58	2	423	0	2089	932	11	2271	1013
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.00	0.59	0.59	0.01	0.64	0.64
Sat Flow, veh/h	0	27	1585	0	7	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	27	0	141	92	0	11	0	1217	43	5	2359	43
Grp Sat Flow(s),veh/h/ln	27	0	1585	7	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	8.6	0.0	0.0	0.6	0.0	25.8	1.4	0.3	76.7	1.2
Cycle Q Clear(g_c), s	32.0	0.0	8.6	32.0	0.0	0.6	0.0	25.8	1.4	0.3	76.7	1.2
Prop In Lane	0.81		1.00	0.95		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	0	423	60	0	423	0	2089	932	11	2271	1013
V/C Ratio(X)	0.44	0.00	0.33	1.53	0.00	0.03	0.00	0.58	0.05	0.44	1.04	0.04
Avail Cap(c_a), veh/h	62	0	423	60	0	423	0	2089	932	74	2271	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	35.4	59.0	0.0	32.5	0.0	15.5	10.5	59.4	21.6	8.0
Incr Delay (d2), s/veh	4.8	0.0	0.5	305.1	0.0	0.0	0.0	0.4	0.0	24.3	29.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.4	6.9	0.0	0.2	0.0	10.2	0.5	0.2	38.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	0.0	35.9	364.2	0.0	32.5	0.0	15.9	10.5	83.7	51.4	8.0
LnGrp LOS	E	A	D	F	A	C	A	B	B	F	F	A
Approach Vol, veh/h		168			103			1260			2407	
Approach Delay, s/veh		39.2			328.7			15.7			50.7	
Approach LOS		D			F			B			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	77.2		36.6		83.4		36.6				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	66.3		32.0		76.7		32.0				
Max Q Clear Time (g_c+I1), s	2.3	27.8		34.0		78.7		34.0				
Green Ext Time (p_c), s	0.0	8.0		0.0		0.0		0.0				

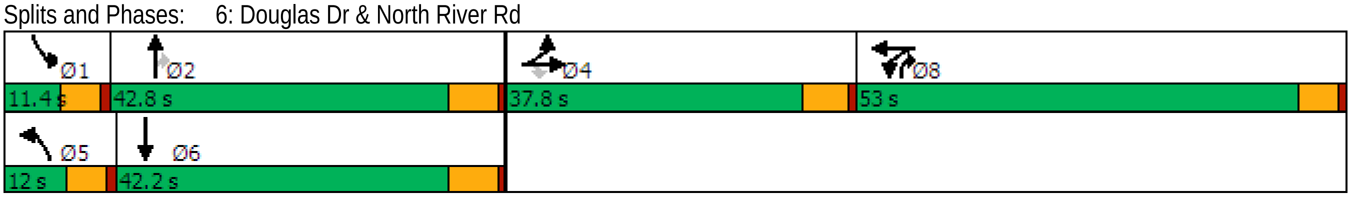
Intersection Summary			
HCM 6th Ctrl Delay			46.3
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	110	220	1100	60	80	510	440	20	830
Future Volume (vph)	60	110	220	1100	60	80	510	440	20	830
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	53.0	53.0	12.0	42.8	53.0	11.4	42.2
Total Split (%)	26.1%	26.1%	26.1%	36.6%	36.6%	8.3%	29.5%	36.6%	7.9%	29.1%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	18.9	18.9	18.9	47.8	47.8	6.6	41.6	92.4	5.9	36.1
Actuated g/C Ratio	0.14	0.14	0.14	0.36	0.36	0.05	0.31	0.70	0.04	0.27
v/c Ratio	0.26	0.24	0.76	1.03	0.98dl	0.99	0.50	0.23	0.28	0.95
Control Delay	51.6	50.3	45.0	87.0	37.7	155.6	41.2	0.9	73.3	66.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	50.3	45.0	87.0	37.7	155.6	41.2	0.9	73.3	66.1
LOS	D	D	D	F	D	F	D	A	E	E
Approach Delay		47.5			60.7		32.8			66.3
Approach LOS		D			E		C			E

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 132.3
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 52.3 Intersection LOS: D
Intersection Capacity Utilization 81.9% ICU Level of Service D
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	110	220	1100	60	20	80	510	440	20	830	10
Future Volume (veh/h)	60	110	220	1100	60	20	80	510	440	20	830	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	120	239	1196	65	22	87	554	478	22	902	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	623	278	1233	463	157	86	1033	1777	37	946	12
Arrive On Green	0.18	0.18	0.18	0.58	0.35	0.35	0.05	0.29	0.49	0.02	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	3563	1337	452	1781	3554	2790	1781	3595	44
Grp Volume(v), veh/h	65	120	239	1196	0	87	87	554	478	22	446	467
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1789	1781	1777	1395	1781	1777	1862
Q Serve(g_s), s	4.3	3.9	20.0	44.0	0.0	4.6	6.6	17.9	8.6	1.7	33.7	33.7
Cycle Q Clear(g_c), s	4.3	3.9	20.0	44.0	0.0	4.6	6.6	17.9	8.6	1.7	33.7	33.7
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	312	623	278	1233	0	619	86	1033	1777	37	468	490
V/C Ratio(X)	0.21	0.19	0.86	0.97	0.00	0.14	1.01	0.54	0.27	0.60	0.95	0.95
Avail Cap(c_a), veh/h	418	833	372	1243	0	624	86	1033	1777	78	469	491
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	48.0	54.6	28.1	0.0	30.7	64.9	40.7	7.7	66.2	49.4	49.4
Incr Delay (d2), s/veh	0.5	0.2	16.1	18.7	0.0	0.1	99.6	1.0	0.2	14.4	30.4	29.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.8	9.2	18.4	0.0	2.0	5.4	8.0	4.9	0.9	18.9	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	48.2	70.7	46.8	0.0	30.8	164.5	41.7	7.8	80.6	79.9	79.0
LnGrp LOS	D	D	E	D	A	C	F	D	A	F	E	E
Approach Vol, veh/h		424			1283			1119			935	
Approach Delay, s/veh		61.0			45.7			36.8			79.5	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	45.9		29.7	12.0	42.1		52.6
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	6.0	36.6		32.0	6.6	36.0		47.6
Max Q Clear Time (g_c+I1), s	3.7	19.9		22.0	8.6	35.7		46.0
Green Ext Time (p_c), s	0.0	8.8		1.9	0.0	0.2		1.2

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Notes

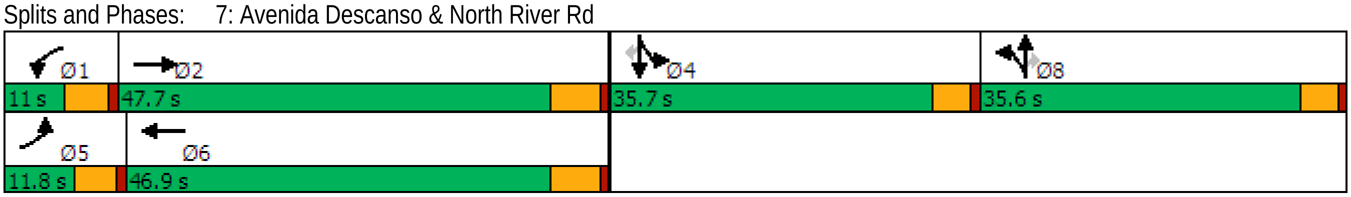
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	70	570	20	1090	5	40	20	140
Future Volume (vph)	70	570	20	1090	5	40	20	140
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6
Total Split (s)	11.8	47.7	11.0	46.9	35.6	35.6	35.7	35.7
Total Split (%)	9.1%	36.7%	8.5%	36.1%	27.4%	27.4%	27.5%	27.5%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	6.9	50.4	6.0	42.2	9.9	9.9	15.6	15.6
Actuated g/C Ratio	0.07	0.53	0.06	0.44	0.10	0.10	0.16	0.16
v/c Ratio	0.60	0.34	0.20	0.80	0.05	0.17	0.60	0.44
Control Delay	66.4	17.9	53.1	30.1	39.1	1.4	46.2	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	17.9	53.1	30.1	39.1	1.4	46.2	17.4
LOS	E	B	D	C	D	A	D	B
Approach Delay		23.1		30.5	8.5		32.8	
Approach LOS		C		C	A		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 95.3	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	570	10	20	1090	60	5	5	40	140	20	140
Future Volume (veh/h)	70	570	10	20	1090	60	5	5	40	140	20	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	620	11	22	1185	65	5	5	43	152	22	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	1613	29	45	1441	79	80	80	139	221	32	224
Arrive On Green	0.06	0.45	0.45	0.02	0.42	0.42	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1781	3572	63	1781	3426	188	912	912	1585	1565	227	1585
Grp Volume(v), veh/h	76	308	323	22	614	636	10	0	43	174	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1859	1781	1777	1837	1825	0	1585	1792	0	1585
Q Serve(g_s), s	2.9	7.9	7.9	0.8	20.9	20.9	0.3	0.0	1.7	6.3	0.0	6.2
Cycle Q Clear(g_c), s	2.9	7.9	7.9	0.8	20.9	20.9	0.3	0.0	1.7	6.3	0.0	6.2
Prop In Lane	1.00		0.03	1.00		0.10	0.50		1.00	0.87		1.00
Lane Grp Cap(c), veh/h	100	802	840	45	748	773	160	0	139	253	0	224
V/C Ratio(X)	0.76	0.38	0.38	0.49	0.82	0.82	0.06	0.00	0.31	0.69	0.00	0.68
Avail Cap(c_a), veh/h	175	1090	1141	154	1070	1106	829	0	720	816	0	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	12.4	12.4	32.9	17.5	17.5	28.6	0.0	29.2	27.9	0.0	27.9
Incr Delay (d2), s/veh	11.4	0.3	0.3	8.2	3.5	3.5	0.2	0.0	1.2	3.3	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.9	3.0	0.4	8.3	8.6	0.2	0.0	0.7	2.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	12.7	12.7	41.1	21.0	21.0	28.7	0.0	30.4	31.2	0.0	31.5
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		707			1272			53			326	
Approach Delay, s/veh		16.0			21.4			30.1			31.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	36.6		14.2	8.9	34.5		10.6
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6
Max Green Setting (Gmax), s	5.9	41.9		31.1	6.7	41.1		31.0
Max Q Clear Time (g_c+I1), s	2.8	9.9		8.3	4.9	22.9		3.7
Green Ext Time (p_c), s	0.0	2.7		1.3	0.0	5.8		0.2

Intersection Summary			
HCM 6th Ctrl Delay			21.3
HCM 6th LOS			C

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	740	1170	10	10	30
Future Vol, veh/h	20	740	1170	10	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	804	1272	11	11	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1283	0	-	0	1724	642
Stage 1	-	-	-	-	1278	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	537	-	-	-	80	417
Stage 1	-	-	-	-	225	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	537	-	-	-	77	417
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	28.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	537	-	-	-	198
HCM Lane V/C Ratio	0.04	-	-	-	0.22
HCM Control Delay (s)	12	-	-	-	28.2
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	720	26	26	1130	10	102	0	102	20	0	50
Future Vol, veh/h	30	720	26	26	1130	10	102	0	102	20	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	783	28	28	1228	11	111	0	111	22	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1239	0	0	811	0	0	1533	-	406	1748	2167	620
Stage 1	-	-	-	-	-	-	863	-	-	1290	1290	-
Stage 2	-	-	-	-	-	-	670	-	-	458	877	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	558	-	-	811	-	-	~ 80	0	594	55	46	431
Stage 1	-	-	-	-	-	-	316	0	-	173	232	-
Stage 2	-	-	-	-	-	-	413	0	-	552	364	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	558	-	-	811	-	-	~ 65	-	594	42	42	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 65	-	-	42	42	-
Stage 1	-	-	-	-	-	-	297	-	-	163	224	-
Stage 2	-	-	-	-	-	-	348	-	-	422	343	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	12.4	79
HCM LOS			B	F

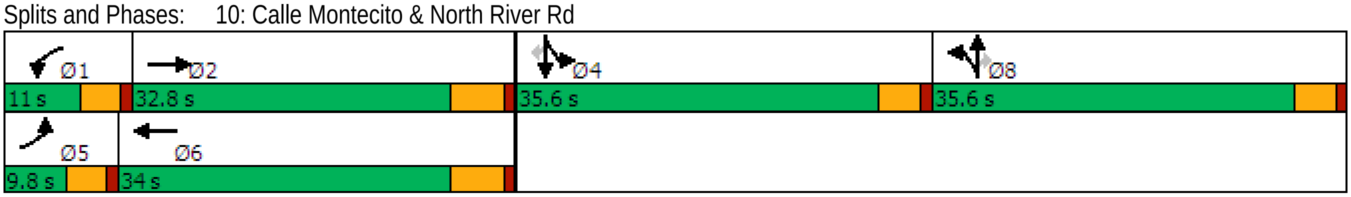
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	594	558	-	-	811	-	-	118
HCM Lane V/C Ratio	0.187	0.058	-	-	0.035	-	-	0.645
HCM Control Delay (s)	12.4	11.9	-	-	9.6	-	-	79
HCM Lane LOS	B	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-	-	3.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	60	660	40	940	5	10	5	140
Future Volume (vph)	60	660	40	940	5	10	5	140
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	9.8	32.8	11.0	34.0	35.6	35.6	35.6	35.6
Total Split (%)	8.5%	28.5%	9.6%	29.6%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	5.5	31.0	6.5	29.6	9.9	9.9	18.2	18.2
Actuated g/C Ratio	0.07	0.38	0.08	0.37	0.12	0.12	0.22	0.22
v/c Ratio	0.54	0.56	0.30	0.91	0.07	0.04	0.69	0.34
Control Delay	59.5	25.8	47.2	38.9	33.0	0.2	40.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	25.8	47.2	38.9	33.0	0.2	40.0	12.1
LOS	E	C	D	D	C	A	D	B
Approach Delay		28.5		39.2	19.6		30.1	
Approach LOS		C		D	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.9	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	660	30	40	940	130	10	5	10	250	5	140
Future Volume (veh/h)	60	660	30	40	940	130	10	5	10	250	5	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	717	33	43	1022	141	11	5	11	272	5	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1329	61	73	1170	161	110	50	140	353	6	320
Arrive On Green	0.05	0.38	0.38	0.04	0.37	0.37	0.09	0.09	0.09	0.20	0.20	0.20
Sat Flow, veh/h	1781	3459	159	1781	3137	432	1243	565	1585	1751	32	1585
Grp Volume(v), veh/h	65	368	382	43	578	585	16	0	11	277	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1793	1808	0	1585	1783	0	1585
Q Serve(g_s), s	2.4	10.9	11.0	1.6	20.6	20.6	0.6	0.0	0.4	10.0	0.0	5.8
Cycle Q Clear(g_c), s	2.4	10.9	11.0	1.6	20.6	20.6	0.6	0.0	0.4	10.0	0.0	5.8
Prop In Lane	1.00		0.09	1.00		0.24	0.69		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	93	682	707	73	663	669	160	0	140	360	0	320
V/C Ratio(X)	0.70	0.54	0.54	0.59	0.87	0.87	0.10	0.00	0.08	0.77	0.00	0.48
Avail Cap(c_a), veh/h	139	708	734	170	739	746	824	0	722	813	0	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	16.3	16.3	32.1	19.8	19.8	28.5	0.0	28.5	25.7	0.0	24.0
Incr Delay (d2), s/veh	9.3	0.8	0.7	7.4	10.4	10.5	0.3	0.0	0.2	3.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.2	4.4	0.8	9.6	9.7	0.2	0.0	0.2	4.4	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	17.0	17.0	39.5	30.2	30.3	28.8	0.0	28.7	29.2	0.0	25.1
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		815			1206			27			429	
Approach Delay, s/veh		18.9			30.6			28.8			27.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	31.8		18.3	8.0	31.1		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	6.5	27.1		31.0	5.3	28.3		31.0				
Max Q Clear Time (g_c+I1), s	3.6	13.0		12.0	4.4	22.6		2.6				
Green Ext Time (p_c), s	0.0	2.8		1.7	0.0	2.7		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			26.2
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	40	900	1040	5	0	110	0	
Future Volume (vph)	40	900	1040	5	0	110	0	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	
Protected Phases	5	2	6		8		4	1
Permitted Phases				8		4		
Detector Phase	5	2	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	6.0	6.0	5.0
Minimum Split (s)	9.5	32.7	29.7	35.6	35.6	21.6	21.6	9.5
Total Split (s)	12.0	53.8	51.8	36.2	36.2	36.2	36.2	10.0
Total Split (%)	12.0%	53.8%	51.8%	36.2%	36.2%	36.2%	36.2%	10%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.6	3.6	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5	6.7	6.7		4.6	5.6	5.6	
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.5	34.7	28.9		14.7	13.5	13.5	
Actuated g/C Ratio	0.12	0.56	0.46		0.24	0.22	0.22	
v/c Ratio	0.20	0.50	0.74		0.02	0.40	0.33	
Control Delay	37.2	9.4	18.5		0.1	28.9	7.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	37.2	9.4	18.5		0.1	28.9	7.1	
LOS	D	A	B		A	C	A	
Approach Delay		10.5	18.5		0.1		16.7	
Approach LOS		B	B		A		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 62.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	900	0	0	1040	70	5	0	5	110	0	140
Future Volume (veh/h)	40	900	0	0	1040	70	5	0	5	110	0	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	978	0	0	1130	76	5	0	5	120	0	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	2093	0	4	1520	102	158	33	78	390	0	245
Arrive On Green	0.05	0.59	0.00	0.00	0.45	0.45	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3647	0	1781	3379	227	291	214	505	1411	0	1585
Grp Volume(v), veh/h	43	978	0	0	594	612	10	0	0	120	0	152
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1010	0	0	1411	0	1585
Q Serve(g_s), s	1.1	7.5	0.0	0.0	13.2	13.3	0.0	0.0	0.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s	1.1	7.5	0.0	0.0	13.2	13.3	4.3	0.0	0.0	3.2	0.0	4.3
Prop In Lane	1.00		0.00	1.00		0.12	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	81	2093	0	4	799	823	269	0	0	390	0	245
V/C Ratio(X)	0.53	0.47	0.00	0.00	0.74	0.74	0.04	0.00	0.00	0.31	0.00	0.62
Avail Cap(c_a), veh/h	279	3491	0	204	1671	1721	969	0	0	1073	0	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	5.6	0.0	0.0	10.9	10.9	17.3	0.0	0.0	18.5	0.0	19.0
Incr Delay (d2), s/veh	5.3	0.2	0.0	0.0	1.4	1.4	0.1	0.0	0.0	0.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.8	0.0	0.0	4.3	4.4	0.1	0.0	0.0	1.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	5.7	0.0	0.0	12.3	12.3	17.4	0.0	0.0	18.9	0.0	21.5
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	C
Approach Vol, veh/h		1021			1206			10			272	
Approach Delay, s/veh		6.7			12.3			17.4			20.4	
Approach LOS		A			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	34.9		13.0	6.7	28.3		13.0
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6
Max Green Setting (Gmax), s	5.5	47.1		30.6	7.5	45.1		* 32
Max Q Clear Time (g_c+I1), s	0.0	9.5		6.3	3.1	15.3		6.3
Green Ext Time (p_c), s	0.0	5.6		1.1	0.0	6.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

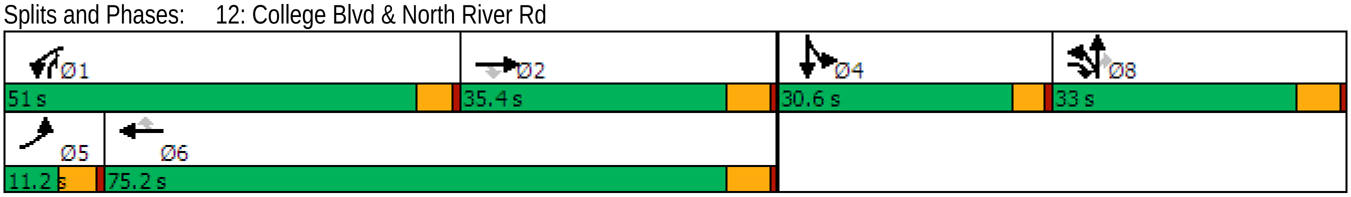
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	290	670	1400	660	90	30	1240	30	60
Future Volume (vph)	20	290	670	1400	660	90	30	1240	30	60
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	11.2	35.4	33.0	51.0	75.2	75.2	33.0	51.0	30.6	30.6
Total Split (%)	7.5%	23.6%	22.0%	34.0%	50.1%	50.1%	22.0%	34.0%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.0	17.4	46.4	46.6	62.8	62.8	27.6	80.1	12.0	12.0
Actuated g/C Ratio	0.05	0.14	0.38	0.38	0.51	0.51	0.23	0.65	0.10	0.10
v/c Ratio	0.25	0.63	0.96	1.17	0.40	0.11	1.08	0.64	0.19	0.42
Control Delay	69.3	56.3	42.8	118.8	21.2	5.2	114.9	7.0	54.7	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.3	56.3	42.8	118.8	21.2	5.2	114.9	7.0	54.7	56.7
LOS	E	E	D	F	C	A	F	A	D	E
Approach Delay		47.3			84.1		33.3			56.1
Approach LOS		D			F		C			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 122.5	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 59.0	Intersection LOS: E
Intersection Capacity Utilization 99.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	290	670	1400	660	90	370	30	1240	30	60	10
Future Volume (veh/h)	20	290	670	1400	660	90	370	30	1240	30	60	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	315	728	1522	717	98	402	33	1348	33	65	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	799	684	1205	1964	876	341	28	1549	103	90	15
Arrive On Green	0.02	0.22	0.22	0.35	0.55	0.55	0.21	0.21	0.21	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1652	136	2790	1781	1559	264
Grp Volume(v), veh/h	22	315	728	1522	717	98	435	0	1348	33	0	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1788	0	1395	1781	0	1823
Q Serve(g_s), s	1.6	9.9	29.6	45.9	14.9	3.9	27.2	0.0	27.2	2.3	0.0	5.4
Cycle Q Clear(g_c), s	1.6	9.9	29.6	45.9	14.9	3.9	27.2	0.0	27.2	2.3	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	37	799	684	1205	1964	876	369	0	1549	103	0	106
V/C Ratio(X)	0.59	0.39	1.06	1.26	0.37	0.11	1.18	0.00	0.87	0.32	0.00	0.72
Avail Cap(c_a), veh/h	83	799	684	1205	1964	876	369	0	1549	352	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.9	43.4	29.7	42.9	16.5	14.0	52.2	0.0	25.2	59.5	0.0	60.9
Incr Delay (d2), s/veh	13.8	0.3	52.8	125.2	0.1	0.1	104.6	0.0	5.7	1.8	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.4	33.1	40.3	6.1	1.4	22.9	0.0	18.7	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	43.7	82.5	168.0	16.6	14.1	156.8	0.0	30.8	61.3	0.0	69.7
LnGrp LOS	E	D	F	F	B	B	F	A	C	E	A	E
Approach Vol, veh/h		1065			2337			1783			109	
Approach Delay, s/veh		70.9			115.1			61.6			67.2	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	51.0	35.4	12.2	7.9	78.5	33.0
Change Period (Y+Rc), s	5.1	5.8	4.6	5.1	5.8	5.8
Max Green Setting (Gmax), s	45.9	29.6	26.0	6.1	69.4	27.2
Max Q Clear Time (g_c+I1), s	47.9	31.6	7.4	3.6	16.9	29.2
Green Ext Time (p_c), s	0.0	0.0	0.4	0.0	4.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	87.2
HCM 6th LOS	F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	30	30	1580	2020	90
Future Volume (vph)	60	30	30	1580	2020	90
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.5	11.5	57.4	45.9	45.9
Total Split (%)	36.2%	12.8%	12.8%	63.8%	51.0%	51.0%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.5	16.6	6.3	56.9	50.6	50.6
Actuated g/C Ratio	0.16	0.24	0.09	0.81	0.72	0.72
v/c Ratio	0.23	0.09	0.11	0.60	0.87	0.09
Control Delay	27.6	17.6	34.6	7.9	21.9	7.1
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	27.6	17.6	34.6	8.0	21.9	7.1
LOS	C	B	C	A	C	A
Approach Delay	24.2			8.5	21.3	
Approach LOS	C			A	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 70.5	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: College Blvd & Buchanon Park

LOS Engineering, Inc.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	30	30	1580	2020	90
Future Volume (veh/h)	60	30	30	1580	2020	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	33	33	1717	2196	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	182	228	143	2621	2195	979
Arrive On Green	0.10	0.10	0.04	0.74	0.62	0.62
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	65	33	33	1717	2196	98
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	2.2	1.2	0.6	15.9	40.1	1.6
Cycle Q Clear(g_c), s	2.2	1.2	0.6	15.9	40.1	1.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	182	228	143	2621	2195	979
V/C Ratio(X)	0.36	0.14	0.23	0.66	1.00	0.10
Avail Cap(c_a), veh/h	768	749	341	2824	2195	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	24.3	30.1	4.3	12.4	5.1
Incr Delay (d2), s/veh	1.2	0.3	0.8	0.5	19.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.3	3.3	17.4	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.3	24.6	30.9	4.8	31.7	5.1
LnGrp LOS	C	C	C	A	F	A
Approach Vol, veh/h	98			1750	2294	
Approach Delay, s/veh	27.1			5.3	30.6	
Approach LOS	C			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		53.7		11.2	7.8	45.9
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		51.6		28.0	6.4	40.1
Max Q Clear Time (g_c+I1), s		17.9		4.2	2.6	42.1
Green Ext Time (p_c), s		13.0		0.3	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			19.8
HCM 6th LOS			B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	210	10	100	20	50	20	1340	20	1790	250
Future Volume (vph)	210	10	100	20	50	20	1340	20	1790	250
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	62.6	10.7	63.2	63.2
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	9.2%	56.9%	9.7%	57.5%	57.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	22.4	22.4		22.4	22.4	5.1	58.0	5.7	58.2	58.2
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.05	0.61	0.06	0.61	0.61
v/c Ratio	0.82	0.29		0.47	0.12	0.23	0.48	0.21	0.90	0.27
Control Delay	57.6	12.2		37.2	3.8	54.1	12.6	52.3	25.4	8.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	9.3	0.0
Total Delay	57.6	12.2		37.2	3.8	54.1	12.6	52.3	34.6	8.7
LOS	E	B		D	A	D	B	D	C	A
Approach Delay		41.1		27.4			13.2		31.6	
Approach LOS		D		C			B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 94.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: College Blvd & Adams St

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	10	110	100	20	50	20	1340	40	20	1790	250
Future Volume (veh/h)	210	10	110	100	20	50	20	1340	40	20	1790	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	228	11	120	109	22	54	22	1457	43	22	1946	272
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	40	438	323	60	472	40	2724	80	40	1899	847
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.02	0.53	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1323	135	1471	876	200	1585	1781	5097	150	1781	3554	1585
Grp Volume(v), veh/h	228	0	131	131	0	54	22	973	527	22	1946	272
Grp Sat Flow(s),veh/h/ln	1323	0	1606	1077	0	1585	1781	1702	1843	1781	1777	1585
Q Serve(g_s), s	17.0	0.0	6.7	8.3	0.0	2.7	1.3	20.0	20.0	1.3	57.4	10.4
Cycle Q Clear(g_c), s	32.0	0.0	6.7	15.0	0.0	2.7	1.3	20.0	20.0	1.3	57.4	10.4
Prop In Lane	1.00		0.92	0.83		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	478	382	0	472	40	1819	985	40	1899	847
V/C Ratio(X)	0.83	0.00	0.27	0.34	0.00	0.11	0.55	0.53	0.53	0.55	1.02	0.32
Avail Cap(c_a), veh/h	276	0	478	382	0	472	83	1819	985	93	1899	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	28.8	34.0	0.0	27.4	52.0	16.3	16.3	52.0	25.0	14.1
Incr Delay (d2), s/veh	18.2	0.0	0.3	0.5	0.0	0.1	11.3	0.3	0.6	11.3	27.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	2.6	2.9	0.0	1.0	0.7	7.6	8.3	0.7	29.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	0.0	29.1	34.5	0.0	27.5	63.3	16.6	16.9	63.3	52.2	14.3
LnGrp LOS	E	A	C	C	A	C	E	B	B	E	F	B
Approach Vol, veh/h		359			185			1522			2240	
Approach Delay, s/veh		51.3			32.5			17.4			47.7	
Approach LOS		D			C			B			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	63.2		36.7	7.5	63.2		36.7				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	5.6	56.8		* 32	5.0	57.4		* 32				
Max Q Clear Time (g_c+I1), s	3.3	22.0		34.0	3.3	59.4		17.0				
Green Ext Time (p_c), s	0.0	9.0		0.0	0.0	0.0		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			36.6									
HCM 6th LOS			D									

Notes

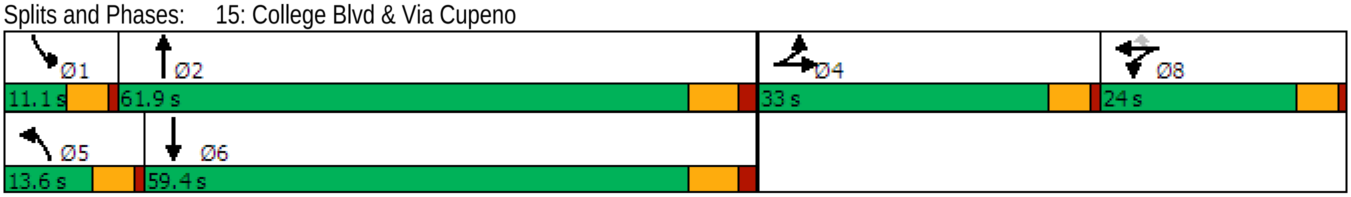
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	5	10	5	180	1330	5	1900
Future Volume (vph)	5	10	5	180	1330	5	1900
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	13.6	61.9	11.1	59.4
Total Split (%)	25.4%	18.5%	18.5%	10.5%	47.6%	8.5%	45.7%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.7	15.9	15.9	8.6	64.8	6.0	53.0
Actuated g/C Ratio	0.11	0.14	0.14	0.08	0.58	0.05	0.48
v/c Ratio	0.32	0.73	0.02	0.74	0.51	0.05	0.89
Control Delay	28.5	63.7	0.0	69.0	16.7	56.0	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	63.7	0.0	69.0	16.7	56.0	33.3
LOS	C	E	A	E	B	E	C
Approach Delay	28.5	62.1			22.7		33.3
Approach LOS	C	E			C		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 111.1
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 15: College Blvd & Via Cupeno



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	5	50	160	10	5	180	1330	50	5	1900	80
Future Volume (veh/h)	60	5	50	160	10	5	180	1330	50	5	1900	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	5	54	174	11	5	196	1446	54	5	2065	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	11	120	210	13	198	266	2818	105	14	2456	103
Arrive On Green	0.08	0.08	0.08	0.13	0.13	0.13	0.08	0.56	0.56	0.01	0.49	0.49
Sat Flow, veh/h	1762	137	1486	1680	106	1585	3456	5052	189	1781	5025	211
Grp Volume(v), veh/h	66	0	58	185	0	5	196	974	526	5	1397	755
Grp Sat Flow(s),veh/h/ln	1782	0	1603	1786	0	1585	1728	1702	1836	1781	1702	1832
Q Serve(g_s), s	3.4	0.0	3.3	9.7	0.0	0.3	5.3	17.0	17.0	0.3	34.1	34.3
Cycle Q Clear(g_c), s	3.4	0.0	3.3	9.7	0.0	0.3	5.3	17.0	17.0	0.3	34.1	34.3
Prop In Lane	0.99		0.93	0.94		1.00	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	143	0	129	224	0	198	266	1899	1024	14	1663	895
V/C Ratio(X)	0.46	0.00	0.45	0.83	0.00	0.03	0.74	0.51	0.51	0.36	0.84	0.84
Avail Cap(c_a), veh/h	521	0	469	355	0	315	307	1959	1057	112	1870	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	42.0	40.9	0.0	36.7	43.2	13.1	13.1	47.3	21.2	21.3
Incr Delay (d2), s/veh	2.3	0.0	2.5	8.7	0.0	0.1	7.7	0.2	0.4	14.9	3.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.4	4.7	0.0	0.1	2.5	6.1	6.7	0.2	13.4	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	0.0	44.5	49.6	0.0	36.8	51.0	13.3	13.5	62.2	24.5	27.4
LnGrp LOS	D	A	D	D	A	D	D	B	B	E	C	C
Approach Vol, veh/h		124			190			1696			2157	
Approach Delay, s/veh		44.4			49.2			17.7			25.6	
Approach LOS		D			D			B			C	

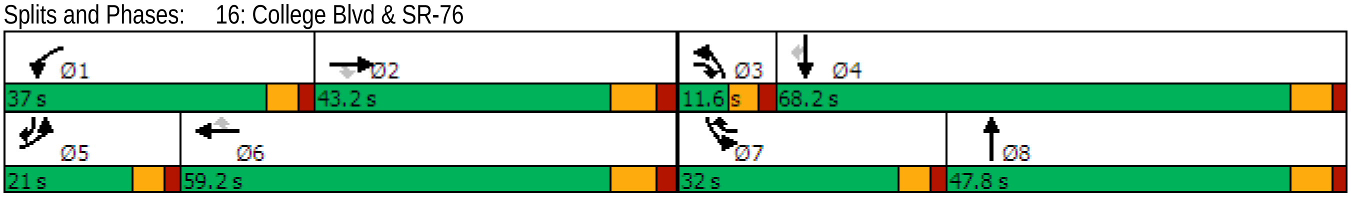
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	60.2		12.7	12.5	53.6		17.0				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	55.1		28.0	8.5	52.6		19.0				
Max Q Clear Time (g_c+I1), s	2.3	19.0		5.4	7.3	36.3		11.7				
Green Ext Time (p_c), s	0.0	9.1		0.4	0.1	10.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			24.0
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	390	990	40	690	1710	590	70	590	680	980	460
Future Volume (vph)	390	990	40	690	1710	590	70	590	680	980	460
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	21.0	43.2	11.6	37.0	59.2	32.0	11.6	47.8	32.0	68.2	21.0
Total Split (%)	13.1%	27.0%	7.3%	23.1%	37.0%	20.0%	7.3%	29.9%	20.0%	42.6%	13.1%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	15.3	35.2	49.1	31.3	51.2	85.5	5.9	41.0	26.3	61.4	83.5
Actuated g/C Ratio	0.10	0.22	0.31	0.20	0.32	0.53	0.04	0.26	0.16	0.38	0.52
v/c Ratio	1.29	0.96	0.07	1.12	1.14	0.73	0.60	1.11	1.31	0.78	0.57
Control Delay	206.2	80.5	0.2	128.5	120.2	31.3	95.7	115.6	201.8	48.5	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	206.2	80.5	0.2	128.5	120.2	31.3	95.7	115.6	201.8	48.5	22.5
LOS	F	F	A	F	F	C	F	F	F	D	C
Approach Delay		112.8			104.6			114.2		92.0	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 103.9	Intersection LOS: F
Intersection Capacity Utilization 112.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	990	40	690	1710	590	70	590	340	680	980	460
Future Volume (veh/h)	390	990	40	690	1710	590	70	590	340	680	980	460
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	424	1076	43	750	1859	641	76	641	370	739	1065	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1123	401	676	1634	768	114	556	321	568	1377	766
Arrive On Green	0.10	0.22	0.22	0.20	0.32	0.32	0.03	0.26	0.26	0.16	0.39	0.39
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2170	1252	3456	3554	1585
Grp Volume(v), veh/h	424	1076	43	750	1859	641	76	525	486	739	1065	500
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1645	1728	1777	1585
Q Serve(g_s), s	15.3	33.3	3.3	31.3	51.2	51.2	3.5	41.0	41.0	26.3	41.9	38.1
Cycle Q Clear(g_c), s	15.3	33.3	3.3	31.3	51.2	51.2	3.5	41.0	41.0	26.3	41.9	38.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	330	1123	401	676	1634	768	114	455	422	568	1377	766
V/C Ratio(X)	1.28	0.96	0.11	1.11	1.14	0.83	0.66	1.15	1.15	1.30	0.77	0.65
Avail Cap(c_a), veh/h	330	1123	401	676	1634	768	127	455	422	568	1377	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	61.7	45.9	64.3	54.4	35.7	76.5	59.5	59.5	66.9	42.9	31.2
Incr Delay (d2), s/veh	148.6	17.6	0.1	68.6	70.0	7.9	10.7	91.3	92.8	148.0	2.8	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	16.3	1.4	20.2	32.5	23.2	1.7	30.0	28.0	23.3	19.0	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	220.9	79.3	46.0	133.0	124.4	43.6	87.1	150.8	152.3	214.8	45.7	33.2
LnGrp LOS	F	E	D	F	F	D	F	F	F	F	D	C
Approach Vol, veh/h		1543			3250			1087			2304	
Approach Delay, s/veh		117.3			110.5			147.0			97.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.0	43.2	11.0	68.8	21.0	59.2	32.0	47.8
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 31	35.2	* 5.9	61.4	* 15	51.2	* 26	41.0
Max Q Clear Time (g_c+I1), s	33.3	35.3	5.5	43.9	17.3	53.2	28.3	43.0
Green Ext Time (p_c), s	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	112.9
HCM 6th LOS	F

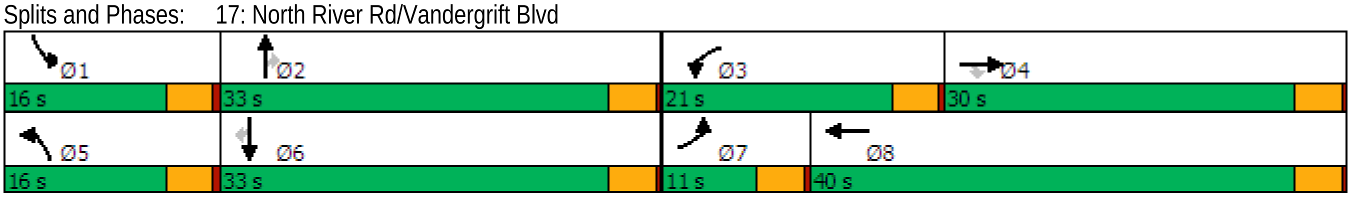
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	60	70	140	860	70	150	1040	390	140	900	50
Future Volume (vph)	60	70	140	860	70	150	1040	390	140	900	50
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	11.0	30.0	30.0	21.0	40.0	16.0	33.0	33.0	16.0	33.0	33.0
Total Split (%)	11.0%	30.0%	30.0%	21.0%	40.0%	16.0%	33.0%	33.0%	16.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.7	11.3	11.3	17.1	23.8	11.3	29.5	29.5	11.0	29.2	29.2
Actuated g/C Ratio	0.08	0.13	0.13	0.20	0.28	0.13	0.35	0.35	0.13	0.34	0.34
v/c Ratio	0.46	0.31	0.45	1.35	0.68	0.69	0.64	0.51	0.66	0.80	0.08
Control Delay	51.3	35.7	9.8	198.7	16.5	53.5	26.5	5.1	51.9	33.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	35.7	9.8	198.7	16.5	53.5	26.5	5.1	51.9	33.0	0.3
LOS	D	D	A	F	B	D	C	A	D	C	A
Approach Delay		25.7			139.8		23.8			33.9	
Approach LOS		C			F		C			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 85.1	
Natural Cycle: 110	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 61.6	Intersection LOS: E
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: North River Rd/Vandergrift Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	70	140	860	70	340	150	1040	390	140	900	50
Future Volume (veh/h)	60	70	140	860	70	340	150	1040	390	140	900	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	76	152	935	76	370	163	1130	424	152	978	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	296	251	692	86	421	199	1776	551	187	1213	541
Arrive On Green	0.05	0.16	0.16	0.20	0.31	0.31	0.11	0.35	0.35	0.11	0.34	0.34
Sat Flow, veh/h	1781	1870	1585	3456	277	1350	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	65	76	152	935	0	446	163	1130	424	152	978	54
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1627	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	3.1	3.0	7.6	17.0	0.0	22.1	7.6	15.7	20.2	7.1	21.2	2.0
Cycle Q Clear(g_c), s	3.1	3.0	7.6	17.0	0.0	22.1	7.6	15.7	20.2	7.1	21.2	2.0
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	84	296	251	692	0	507	199	1776	551	187	1213	541
V/C Ratio(X)	0.78	0.26	0.61	1.35	0.00	0.88	0.82	0.64	0.77	0.81	0.81	0.10
Avail Cap(c_a), veh/h	147	572	485	692	0	690	252	1776	551	252	1213	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	31.4	33.3	34.0	0.0	27.7	36.9	23.2	24.7	37.2	25.4	19.1
Incr Delay (d2), s/veh	14.2	0.5	2.3	167.8	0.0	9.8	15.4	1.8	9.9	13.5	5.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.4	3.0	23.0	0.0	9.6	4.1	6.3	8.8	3.7	9.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	31.8	35.6	201.8	0.0	37.5	52.3	24.9	34.6	50.7	31.2	19.4
LnGrp LOS	D	C	D	F	A	D	D	C	C	D	C	B
Approach Vol, veh/h		293			1381			1717			1184	
Approach Delay, s/veh		38.8			148.7			29.9			33.2	
Approach LOS		D			F			C			C	

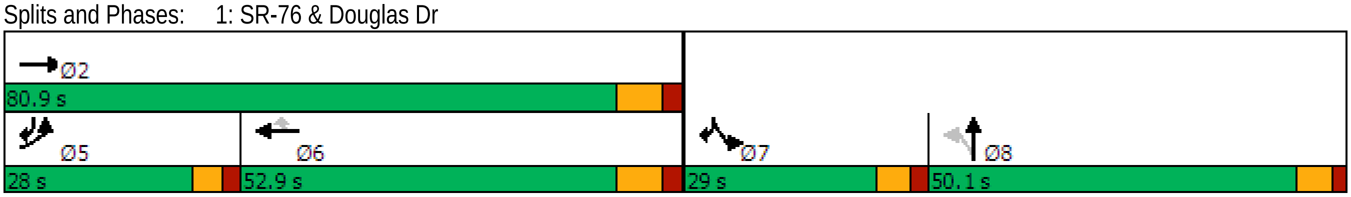
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	33.6	21.0	17.5	13.5	33.0	8.0	30.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	17.0	26.0	12.0	29.0	7.0	36.0
Max Q Clear Time (g_c+I1), s	9.1	22.2	19.0	9.6	9.6	23.2	5.1	24.1
Green Ext Time (p_c), s	0.1	4.7	0.0	0.8	0.1	3.2	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	67.2
HCM 6th LOS	E

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø8
Lane Configurations							
Traffic Volume (vph)	630	2070	1360	310	340	450	
Future Volume (vph)	630	2070	1360	310	340	450	
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov	
Protected Phases	5	2	6		7	5 7	8
Permitted Phases				6			
Detector Phase	5	2	6	6	7	5 7	
Switch Phase							
Minimum Initial (s)	13.0	25.0	25.0	25.0	13.0		5.0
Minimum Split (s)	21.7	33.0	33.0	33.0	22.1		50.1
Total Split (s)	28.0	80.9	52.9	52.9	29.0		50.1
Total Split (%)	17.5%	50.6%	33.1%	33.1%	18.1%		31%
Yellow Time (s)	3.7	5.5	5.5	5.5	4.1		4.1
All-Red Time (s)	2.0	2.5	2.5	2.5	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.7	8.0	8.0	8.0	6.1		
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Recall Mode	None	None	None	None	None		None
Act Effct Green (s)	22.3	72.9	44.9	44.9	22.9	51.3	
Actuated g/C Ratio	0.20	0.66	0.41	0.41	0.21	0.47	
v/c Ratio	0.98	0.96	1.02	0.40	1.01	0.32	
Control Delay	74.7	29.0	62.4	3.8	92.6	2.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.7	29.0	62.4	3.8	92.6	2.8	
LOS	E	C	E	A	F	A	
Approach Delay		39.7	51.5				
Approach LOS		D	D				

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 109.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 43.8	Intersection LOS: D
Intersection Capacity Utilization 89.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SR-76 & Douglas Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	630	2070	0	0	1360	310	0	0	0	340	0	450
Future Volume (veh/h)	630	2070	0	0	1360	310	0	0	0	340	0	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	685	2250	0	0	1478	337	0	0	0	370	0	489
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	701	2357	0	0	1452	648	0	2	0	371	0	0
Arrive On Green	0.20	0.66	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.21	0.00	0.00
Sat Flow, veh/h	3456	3647	0	0	3647	1585	0	-114092	0	1781	370	
Grp Volume(v), veh/h	685	2250	0	0	1478	337	0	0	0	370	89.3	
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	0	1870	0	1781	F	
Q Serve(g_s), s	21.7	63.9	0.0	0.0	44.9	17.6	0.0	0.0	0.0	22.8		
Cycle Q Clear(g_c), s	21.7	63.9	0.0	0.0	44.9	17.6	0.0	0.0	0.0	22.8		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	701	2357	0	0	1452	648	0	2	0	371		
V/C Ratio(X)	0.98	0.95	0.00	0.00	1.02	0.52	0.00	0.00	0.00	1.00		
Avail Cap(c_a), veh/h	701	2357	0	0	1452	648	0	749	0	371		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	43.5	17.0	0.0	0.0	32.5	24.4	0.0	0.0	0.0	43.5		
Incr Delay (d2), s/veh	28.2	10.0	0.0	0.0	28.2	0.7	0.0	0.0	0.0	45.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.9	25.9	0.0	0.0	24.3	6.6	0.0	0.0	0.0	14.7		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	27.0	0.0	0.0	60.7	25.2	0.0	0.0	0.0	89.3		
LnGrp LOS	E	C	A	A	F	C	A	A	A	F		
Approach Vol, veh/h		2935			1815			0				
Approach Delay, s/veh		37.4			54.1			0.0				
Approach LOS		D			D							

Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		80.9			28.0	52.9	29.0	0.0				
Change Period (Y+Rc), s		8.0			* 5.7	8.0	6.1	6.1				
Max Green Setting (Gmax), s		72.9			* 22	44.9	22.9	44.0				
Max Q Clear Time (g_c+I1), s		65.9			23.7	46.9	24.8	0.0				
Green Ext Time (p_c), s		5.9			0.0	0.0	0.0	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			47.1
HCM 6th LOS			D

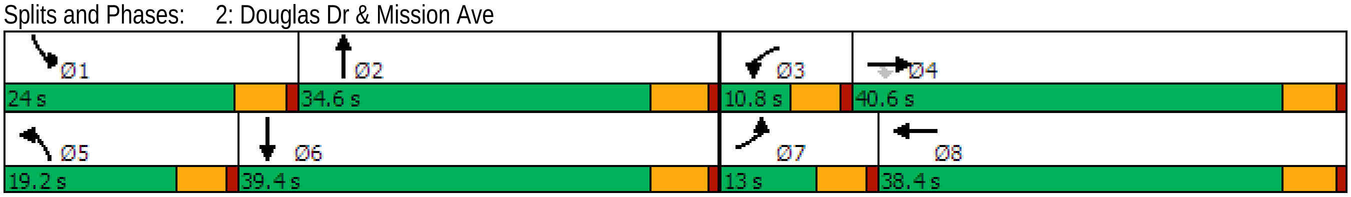
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	280	750	170	70	410	190	710	360	590
Future Volume (vph)	280	750	170	70	410	190	710	360	590
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.1	40.4	40.4	10.1	38.4	10.1	32.8	10.1	34.8
Total Split (s)	13.0	40.6	40.6	10.8	38.4	19.2	34.6	24.0	39.4
Total Split (%)	11.8%	36.9%	36.9%	9.8%	34.9%	17.5%	31.5%	21.8%	35.8%
Yellow Time (s)	4.1	4.4	4.4	4.1	4.4	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.4	5.4	5.1	5.4	5.1	5.8	5.1	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.0	30.4	30.4	5.7	28.2	14.0	26.8	19.0	31.8
Actuated g/C Ratio	0.08	0.29	0.29	0.06	0.27	0.14	0.26	0.18	0.31
v/c Ratio	1.16	0.78	0.33	0.78	0.86	0.87	0.88	1.20	0.65
Control Delay	147.6	39.6	10.4	96.6	35.1	78.4	49.6	155.5	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.6	39.6	10.4	96.6	35.1	78.4	49.6	155.5	34.5
LOS	F	D	B	F	D	E	D	F	C
Approach Delay		60.7			39.8		55.5		77.7
Approach LOS		E			D		E		E

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 103.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 59.0	Intersection LOS: E
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 2: Douglas Dr & Mission Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	750	170	70	410	440	190	710	30	360	590	60
Future Volume (veh/h)	280	750	170	70	410	440	190	710	30	360	590	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	304	815	185	76	446	478	207	772	33	391	641	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	1161	518	94	544	486	233	855	37	313	947	96
Arrive On Green	0.07	0.33	0.33	0.05	0.31	0.31	0.13	0.25	0.25	0.18	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	1781	1777	1585	1781	3472	148	1781	3258	330
Grp Volume(v), veh/h	304	815	185	76	446	478	207	395	410	391	349	357
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1844	1781	1777	1811
Q Serve(g_s), s	7.9	21.6	9.6	4.5	25.0	32.3	12.3	23.2	23.2	18.9	18.7	18.7
Cycle Q Clear(g_c), s	7.9	21.6	9.6	4.5	25.0	32.3	12.3	23.2	23.2	18.9	18.7	18.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	253	1161	518	94	544	486	233	437	454	313	517	526
V/C Ratio(X)	1.20	0.70	0.36	0.81	0.82	0.98	0.89	0.90	0.90	1.25	0.68	0.68
Avail Cap(c_a), veh/h	253	1161	518	94	544	486	233	475	493	313	554	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	31.7	27.6	50.5	34.6	37.1	46.0	39.4	39.4	44.4	33.7	33.7
Incr Delay (d2), s/veh	121.3	1.9	0.4	38.4	9.6	36.6	31.1	19.5	19.0	136.7	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	9.4	3.7	3.0	12.1	17.2	7.4	12.4	12.8	20.1	8.4	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.2	33.6	28.0	88.9	44.2	73.7	77.2	58.9	58.4	181.1	36.7	36.7
LnGrp LOS	F	C	C	F	D	E	E	E	E	F	D	D
Approach Vol, veh/h		1304			1000			1012			1097	
Approach Delay, s/veh		64.9			61.7			62.4			88.2	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	32.3	10.8	40.6	19.2	37.1	13.0	38.4				
Change Period (Y+Rc), s	5.1	5.8	5.1	5.4	5.1	5.8	5.1	5.4				
Max Green Setting (Gmax), s	18.9	28.8	5.7	35.2	14.1	33.6	7.9	33.0				
Max Q Clear Time (g_c+I1), s	20.9	25.2	6.5	23.6	14.3	20.7	9.9	34.3				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.9	0.0	2.5	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			69.4									
HCM 6th LOS			E									

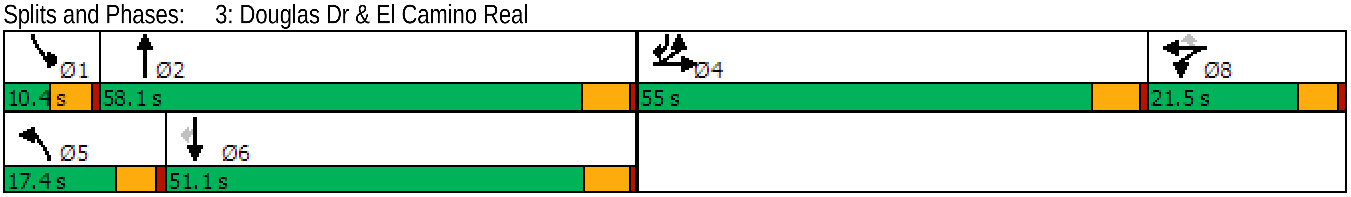
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	1180	70	80	30	10	110	1190	10	840	730
Future Volume (vph)	1180	70	80	30	10	110	1190	10	840	730
Turn Type	Split	NA	Free	NA	Perm	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4		8		5	2	1	6	4
Permitted Phases			Free		8					6
Detector Phase	4	4		8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	5.0	10.0	5.0	10.0	4.0
Minimum Split (s)	27.2	27.2		21.5	21.5	10.4	34.2	10.4	33.0	27.2
Total Split (s)	55.0	55.0		21.5	21.5	17.4	58.1	10.4	51.1	55.0
Total Split (%)	37.9%	37.9%		14.8%	14.8%	12.0%	40.1%	7.2%	35.2%	37.9%
Yellow Time (s)	5.2	5.2		4.5	4.5	4.4	5.2	4.4	5.0	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		5.5	5.5	5.4	6.2	5.4	6.0	6.2
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	Min	None	Min	None
Act Effct Green (s)	48.9	48.9	137.3	12.4	12.4	11.6	54.1	5.0	41.2	96.1
Actuated g/C Ratio	0.36	0.36	1.00	0.09	0.09	0.08	0.39	0.04	0.30	0.70
v/c Ratio	1.05	0.11	0.05	0.60	0.04	0.81	0.99	0.17	0.86	0.41
Control Delay	82.4	32.2	0.1	76.6	0.3	97.9	62.7	73.3	55.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	32.2	0.1	76.6	0.3	97.9	62.7	73.3	55.0	9.6
LOS	F	C	A	E	A	F	E	E	E	A
Approach Delay		74.8		68.9			65.5		34.2	
Approach LOS		E		E			E		C	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 137.3	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Douglas Dr & El Camino Real



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1180	70	80	60	30	10	110	1190	70	10	840	730
Future Volume (veh/h)	1180	70	80	60	30	10	110	1190	70	10	840	730
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1283	76	0	65	33	11	120	1293	76	11	913	793
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1250	677		82	42	108	144	1312	77	22	1125	1893
Arrive On Green	0.36	0.36	0.00	0.07	0.07	0.07	0.08	0.64	0.38	0.01	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	1201	610	1585	1781	3411	200	1781	3554	2790
Grp Volume(v), veh/h	1283	76	0	98	0	11	120	673	696	11	913	793
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1810	0	1585	1781	1777	1834	1781	1777	1395
Q Serve(g_s), s	48.8	3.6	0.0	7.2	0.0	0.9	9.0	49.6	50.2	0.8	31.9	17.2
Cycle Q Clear(g_c), s	48.8	3.6	0.0	7.2	0.0	0.9	9.0	49.6	50.2	0.8	31.9	17.2
Prop In Lane	1.00		1.00	0.66		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	1250	677		123	0	108	144	684	706	22	1125	1893
V/C Ratio(X)	1.03	0.11		0.79	0.00	0.10	0.84	0.98	0.99	0.49	0.81	0.42
Avail Cap(c_a), veh/h	1250	677		215	0	188	158	684	706	66	1188	1942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	28.6	0.0	61.9	0.0	59.0	61.1	23.7	25.7	66.2	42.4	9.7
Incr Delay (d2), s/veh	32.4	0.1	0.0	10.9	0.0	0.4	28.5	30.2	30.5	15.9	4.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.2	1.7	0.0	3.7	0.0	0.4	5.2	21.4	23.4	0.5	14.6	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.4	28.7	0.0	72.8	0.0	59.4	89.7	53.9	56.1	82.0	46.5	9.9
LnGrp LOS	F	C		E	A	E	F	D	E	F	D	A
Approach Vol, veh/h		1359	A		109			1489			1717	
Approach Delay, s/veh		72.8			71.4			57.8			29.8	
Approach LOS		E			E			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	58.1		55.0	16.3	48.9		14.7
Change Period (Y+Rc), s	5.4	6.2		6.2	5.4	* 6.2		5.5
Max Green Setting (Gmax), s	5.0	51.9		48.8	12.0	* 45		16.0
Max Q Clear Time (g_c+I1), s	2.8	52.2		50.8	11.0	33.9		9.2
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.7		0.2

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

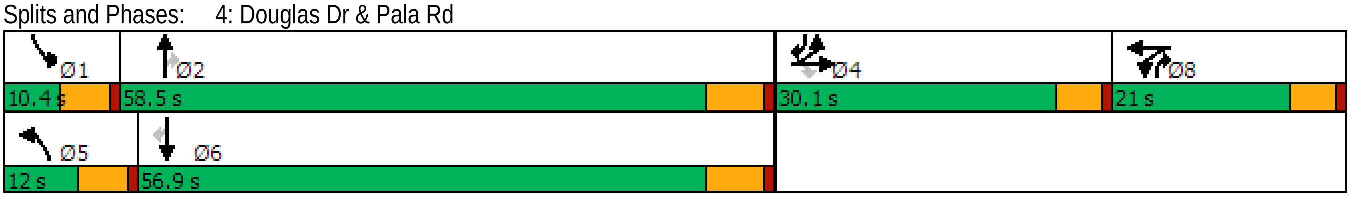
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	5	110	20	5	110	2150	30	20	1450	120
Future Volume (vph)	110	5	110	20	5	110	2150	30	20	1450	120
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	4	4		8	8	5	2	8	1	6	4
Permitted Phases			4					2			6
Detector Phase	4	4	4	8	8	5	2	8	1	6	4
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	5.0	10.0	6.0	5.0	10.0	6.0
Minimum Split (s)	30.1	30.1	30.1	21.0	21.0	10.4	24.0	21.0	10.4	30.2	30.1
Total Split (s)	30.1	30.1	30.1	21.0	21.0	12.0	58.5	21.0	10.4	56.9	30.1
Total Split (%)	25.1%	25.1%	25.1%	17.5%	17.5%	10.0%	48.8%	17.5%	8.7%	47.4%	25.1%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.4	5.2	4.1	4.4	5.2	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	5.4	6.2	5.1	5.4	6.2	5.1
Lead/Lag						Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	11.0	11.0	11.0	6.9	6.9	6.7	59.7	68.4	5.1	51.3	68.6
Actuated g/C Ratio	0.12	0.12	0.12	0.07	0.07	0.07	0.63	0.72	0.05	0.54	0.72
v/c Ratio	0.33	0.31	0.41	0.17	0.26	0.97	1.06	0.03	0.24	0.83	0.11
Control Delay	43.6	43.1	10.8	48.2	23.1	122.1	57.4	0.3	53.9	25.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	43.1	10.8	48.2	23.1	122.1	57.4	0.3	53.9	25.3	1.1
LOS	D	D	B	D	C	F	E	A	D	C	A
Approach Delay		27.4			32.3		59.8			23.8	
Approach LOS		C			C		E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 43.9	Intersection LOS: D
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Douglas Dr & Pala Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	5	110	20	5	30	110	2150	30	20	1450	120
Future Volume (veh/h)	110	5	110	20	5	30	110	2150	30	20	1450	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	0	120	22	5	33	120	2337	33	22	1576	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	0	167	92	11	73	130	2056	999	42	1880	1005
Arrive On Green	0.11	0.00	0.11	0.05	0.05	0.05	0.07	0.97	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3563	0	1585	1781	213	1405	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	124	0	120	22	0	38	120	2337	33	22	1576	130
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1618	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	33.9	3.0
Cycle Q Clear(g_c), s	2.9	0.0	6.6	1.1	0.0	2.1	6.1	52.3	0.7	1.1	33.9	3.0
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	0	167	92	0	84	130	2056	999	42	1880	1005
V/C Ratio(X)	0.33	0.00	0.72	0.24	0.00	0.45	0.92	1.14	0.03	0.53	0.84	0.13
Avail Cap(c_a), veh/h	985	0	438	313	0	284	130	2056	999	99	1993	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	39.1	41.2	0.0	41.6	41.7	1.5	6.3	43.7	18.0	6.6
Incr Delay (d2), s/veh	0.5	0.0	5.7	1.3	0.0	3.8	55.8	68.2	0.0	9.9	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	2.8	0.5	0.0	0.9	4.6	20.1	0.3	0.6	13.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	44.8	42.5	0.0	45.5	97.5	69.7	6.3	53.5	21.2	6.6
LnGrp LOS	D	A	D	D	A	D	F	F	A	D	C	A
Approach Vol, veh/h		244			60			2490			1728	
Approach Delay, s/veh		41.4			44.4			70.2			20.5	
Approach LOS		D			D			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	58.5		14.6	12.0	54.0		9.8
Change Period (Y+Rc), s	5.4	6.2		5.1	5.4	6.2		5.1
Max Green Setting (Gmax), s	5.0	52.3		25.0	6.6	50.7		15.9
Max Q Clear Time (g_c+I1), s	3.1	54.3		8.6	8.1	35.9		4.1
Green Ext Time (p_c), s	0.0	0.0		0.9	0.0	8.2		0.1

Intersection Summary			
HCM 6th Ctrl Delay			49.3
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	10	5	90	50	5	5	2070	100	5	1380	90
Future Volume (vph)	10	5	90	50	5	5	2070	100	5	1380	90
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		2		1	6	
Permitted Phases	4		4	8		8		2			6
Detector Phase	4	4	4	8	8	8	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	28.7	28.7	10.4	28.7	28.7
Total Split (s)	36.6	36.6	36.6	36.6	36.6	36.6	83.0	83.0	10.4	93.4	93.4
Total Split (%)	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	63.8%	63.8%	8.0%	71.8%	71.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	5.2	5.2	4.4	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6	4.6		4.6	4.6	6.7	6.7	5.4	6.7	6.7
Lead/Lag							Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)		12.6	12.6		12.6	12.6	81.8	81.8	5.1	83.5	83.5
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.76	0.76	0.05	0.78	0.78
v/c Ratio		0.09	0.39		0.37	0.02	0.84	0.09	0.06	0.55	0.08
Control Delay		40.1	17.9		47.9	0.2	15.1	3.5	54.6	6.8	3.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		40.1	17.9		47.9	0.2	15.1	3.5	54.6	6.8	3.3
LOS		D	B		D	A	B	A	D	A	A
Approach Delay		21.1			44.2		14.5			6.7	
Approach LOS		C			D		B			A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 107.5	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

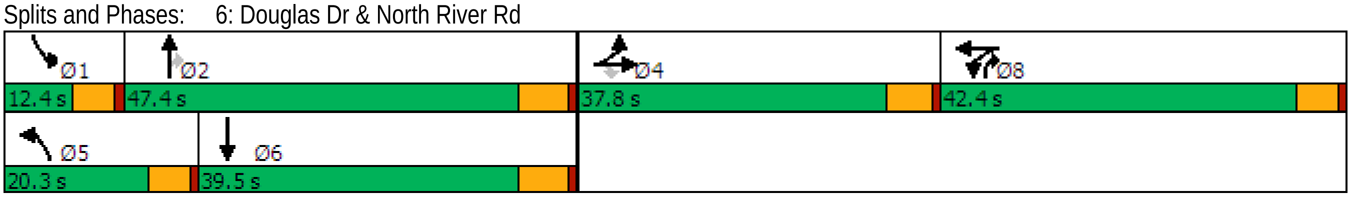
Splits and Phases: 5: Douglas Dr & Rainer Way

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	90	50	5	5	0	2070	100	5	1380	90
Future Volume (veh/h)	10	5	90	50	5	5	0	2070	100	5	1380	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	98	54	5	5	0	2250	109	5	1500	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	53	16	400	66	4	400	0	2161	964	11	2337	1042
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.61	0.61	0.01	0.66	0.66
Sat Flow, veh/h	19	62	1585	45	15	1585	0	3647	1585	1781	3554	1585
Grp Volume(v), veh/h	16	0	98	59	0	5	0	2250	109	5	1500	98
Grp Sat Flow(s),veh/h/ln	81	0	1585	60	0	1585	0	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.3	0.0	6.2	1.2	0.0	0.3	0.0	76.3	3.6	0.4	31.4	2.8
Cycle Q Clear(g_c), s	31.4	0.0	6.2	31.7	0.0	0.3	0.0	76.3	3.6	0.4	31.4	2.8
Prop In Lane	0.69		1.00	0.92		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	0	400	70	0	400	0	2161	964	11	2337	1042
V/C Ratio(X)	0.23	0.00	0.24	0.84	0.00	0.01	0.00	1.04	0.11	0.44	0.64	0.09
Avail Cap(c_a), veh/h	73	0	404	74	0	404	0	2161	964	71	2456	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	37.4	61.1	0.0	35.2	0.0	24.6	10.3	62.1	12.7	7.8
Incr Delay (d2), s/veh	1.7	0.0	0.3	53.8	0.0	0.0	0.0	31.1	0.1	25.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.5	2.9	0.0	0.1	0.0	39.0	1.3	0.2	11.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	0.0	37.7	115.0	0.0	35.2	0.0	55.6	10.4	87.2	13.3	7.9
LnGrp LOS	D	A	D	F	A	D	A	F	B	F	B	A
Approach Vol, veh/h		114			64			2359			1603	
Approach Delay, s/veh		38.1			108.7			53.6			13.2	
Approach LOS		D			F			D			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.2	83.0		36.4		89.2		36.4				
Change Period (Y+Rc), s	5.4	6.7		4.6		6.7		4.6				
Max Green Setting (Gmax), s	5.0	76.3		32.0		86.7		32.0				
Max Q Clear Time (g_c+I1), s	2.4	78.3		33.4		33.4		33.7				
Green Ext Time (p_c), s	0.0	0.0		0.0		12.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			38.3									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	110	80	660	70	170	780	1010	50	670
Future Volume (vph)	40	110	80	660	70	170	780	1010	50	670
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4		8	8	5	2	8	1	6
Permitted Phases			4					2		
Detector Phase	4	4	4	8	8	5	2	8	1	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	37.8	37.8	37.8	42.4	42.4	10.4	40.2	42.4	10.4	39.2
Total Split (s)	37.8	37.8	37.8	42.4	42.4	20.3	47.4	42.4	12.4	39.5
Total Split (%)	27.0%	27.0%	27.0%	30.3%	30.3%	14.5%	33.9%	30.3%	8.9%	28.2%
Yellow Time (s)	4.8	4.8	4.8	4.4	4.4	4.4	5.2	4.4	4.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.4	5.4	5.4	6.2	5.4	5.4	6.2
Lead/Lag						Lead	Lag		Lead	Lag
Lead-Lag Optimize?						Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	None	Min
Act Effct Green (s)	13.6	13.6	13.6	36.1	36.1	15.0	43.4	81.5	6.9	32.6
Actuated g/C Ratio	0.11	0.11	0.11	0.30	0.30	0.12	0.36	0.68	0.06	0.27
v/c Ratio	0.21	0.30	0.28	0.74	0.50	0.84	0.67	0.51	0.54	0.82
Control Delay	50.3	50.3	2.2	49.7	37.3	83.3	37.7	2.1	77.9	49.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	50.3	2.2	49.7	37.3	83.3	37.7	2.1	77.9	49.9
LOS	D	D	A	D	D	F	D	A	E	D
Approach Delay		33.6			42.6		23.3			51.7
Approach LOS		C			D		C			D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 120.3	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Douglas Dr & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	110	80	660	70	50	170	780	1010	50	670	50
Future Volume (veh/h)	40	110	80	660	70	50	170	780	1010	50	670	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	120	87	717	76	54	185	848	1098	54	728	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	313	140	929	265	188	218	1371	1804	70	1015	75
Arrive On Green	0.09	0.09	0.09	0.26	0.26	0.26	0.12	0.39	0.39	0.04	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	3563	1017	723	1781	3554	2790	1781	3354	249
Grp Volume(v), veh/h	43	120	87	717	0	130	185	848	1098	54	386	396
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	0	1740	1781	1777	1395	1781	1777	1826
Q Serve(g_s), s	2.3	3.2	5.3	18.8	0.0	6.0	10.3	19.4	23.1	3.0	19.5	19.5
Cycle Q Clear(g_c), s	2.3	3.2	5.3	18.8	0.0	6.0	10.3	19.4	23.1	3.0	19.5	19.5
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	157	313	140	929	0	454	218	1371	1804	70	537	552
V/C Ratio(X)	0.27	0.38	0.62	0.77	0.00	0.29	0.85	0.62	0.61	0.78	0.72	0.72
Avail Cap(c_a), veh/h	565	1128	503	1308	0	639	263	1452	1867	124	587	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	43.4	44.3	34.5	0.0	29.8	43.3	25.0	10.4	48.0	31.3	31.3
Incr Delay (d2), s/veh	1.3	1.1	6.3	2.4	0.0	0.5	19.2	1.2	0.9	16.7	5.2	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.5	2.3	8.3	0.0	2.6	5.6	8.2	13.2	1.7	9.0	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	44.5	50.6	36.9	0.0	30.3	62.5	26.1	11.2	64.7	36.5	36.4
LnGrp LOS	D	D	D	D	A	C	E	C	B	E	D	D
Approach Vol, veh/h		250			847			2131			836	
Approach Delay, s/veh		46.6			35.9			21.6			38.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	45.1		14.7	17.7	36.7		31.7
Change Period (Y+Rc), s	5.4	6.2		5.8	5.4	6.2		5.4
Max Green Setting (Gmax), s	7.0	41.2		32.0	14.9	33.3		37.0
Max Q Clear Time (g_c+I1), s	5.0	25.1		7.3	12.3	21.5		20.8
Green Ext Time (p_c), s	0.0	13.8		1.6	0.2	5.1		5.5

Intersection Summary			
HCM 6th Ctrl Delay			29.5
HCM 6th LOS			C

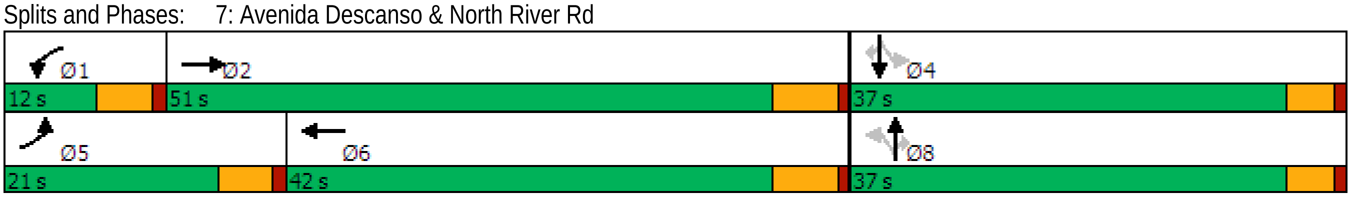
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	150	1120	30	780	5	5	40	100	5	90
Future Volume (vph)	150	1120	30	780	5	5	40	100	5	90
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	1	6		8			4	
Permitted Phases					8		8	4		4
Detector Phase	5	2	1	6	8	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.1	24.8	10.1	24.8	35.6	35.6	35.6	35.6	35.6	35.6
Total Split (s)	21.0	51.0	12.0	42.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	21.0%	51.0%	12.0%	42.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Yellow Time (s)	4.1	4.8	4.1	4.8	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	5.1	5.8	5.1	5.8		4.6	4.6		4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	11.8	38.4	6.7	24.9		13.4	13.4		13.4	13.4
Actuated g/C Ratio	0.18	0.57	0.10	0.37		0.20	0.20		0.20	0.20
v/c Ratio	0.52	0.61	0.19	0.74		0.03	0.10		0.42	0.23
Control Delay	35.6	13.7	37.7	23.0		23.7	0.5		30.0	2.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	35.6	13.7	37.7	23.0		23.7	0.5		30.0	2.9
LOS	D	B	D	C		C	A		C	A
Approach Delay		16.2		23.4		4.9			17.5	
Approach LOS		B		C		A			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 66.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Avenida Descanso & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1120	20	30	780	110	5	5	40	100	5	90
Future Volume (veh/h)	150	1120	20	30	780	110	5	5	40	100	5	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	1217	22	33	848	120	5	5	43	109	5	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	1432	26	57	999	141	65	45	608	86	2	608
Arrive On Green	0.11	0.40	0.40	0.03	0.32	0.32	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	3571	65	1781	3125	442	2	117	1585	6	6	1585
Grp Volume(v), veh/h	163	605	634	33	482	486	10	0	43	114	0	98
Grp Sat Flow(s),veh/h/ln	1781	1777	1859	1781	1777	1791	119	0	1585	12	0	1585
Q Serve(g_s), s	7.5	26.1	26.2	1.5	21.4	21.4	0.1	0.0	1.5	0.1	0.0	3.4
Cycle Q Clear(g_c), s	7.5	26.1	26.2	1.5	21.4	21.4	32.4	0.0	1.5	32.4	0.0	3.4
Prop In Lane	1.00		0.03	1.00		0.25	0.50		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	202	713	746	57	568	572	109	0	608	88	0	608
V/C Ratio(X)	0.81	0.85	0.85	0.58	0.85	0.85	0.09	0.00	0.07	1.30	0.00	0.16
Avail Cap(c_a), veh/h	335	951	995	146	762	768	110	0	608	88	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.5	23.0	23.0	40.3	26.8	26.8	21.6	0.0	16.5	41.5	0.0	17.1
Incr Delay (d2), s/veh	7.4	5.7	5.4	9.1	6.9	6.8	0.4	0.0	0.0	195.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	11.4	11.8	0.8	9.7	9.8	0.1	0.0	0.5	6.6	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	28.6	28.4	49.5	33.7	33.6	21.9	0.0	16.5	236.7	0.0	17.2
LnGrp LOS	D	C	C	D	C	C	C	A	B	F	A	B
Approach Vol, veh/h		1402			1001			53			212	
Approach Delay, s/veh		30.3			34.2			17.6			135.2	
Approach LOS		C			C			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	39.7		37.0	14.7	32.8		37.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	6.9	45.2		32.4	15.9	36.2		32.4				
Max Q Clear Time (g_c+I1), s	3.5	28.2		34.4	9.5	23.4		34.4				
Green Ext Time (p_c), s	0.0	5.5		0.0	0.3	3.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			39.9									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	1260	890	20	5	20
Future Vol, veh/h	30	1260	890	20	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	1370	967	22	5	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	989	0	-	0	1729	495
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	751	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	695	-	-	-	79	520
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	427	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	695	-	-	-	75	520
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	427	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	695	-	-	-	238
HCM Lane V/C Ratio	0.047	-	-	-	0.114
HCM Control Delay (s)	10.4	-	-	-	22.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1220	112	112	900	20	48	0	48	20	0	10
Future Vol, veh/h	30	1220	112	112	900	20	48	0	48	20	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	140	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1326	122	122	978	22	52	0	52	22	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1000	0	0	1448	0	0	2186	-	724	1962	2747	500
Stage 1	-	-	-	-	-	-	1453	-	-	1233	1233	-
Stage 2	-	-	-	-	-	-	733	-	-	729	1514	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	688	-	-	464	-	-	~ 25	0	368	38	20	516
Stage 1	-	-	-	-	-	-	137	0	-	187	247	-
Stage 2	-	-	-	-	-	-	378	0	-	380	181	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	688	-	-	464	-	-	~ 19	-	368	25	14	516
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 19	-	-	25	14	-
Stage 1	-	-	-	-	-	-	130	-	-	178	182	-
Stage 2	-	-	-	-	-	-	273	-	-	310	172	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	16.4	273.8
HCM LOS			C	F

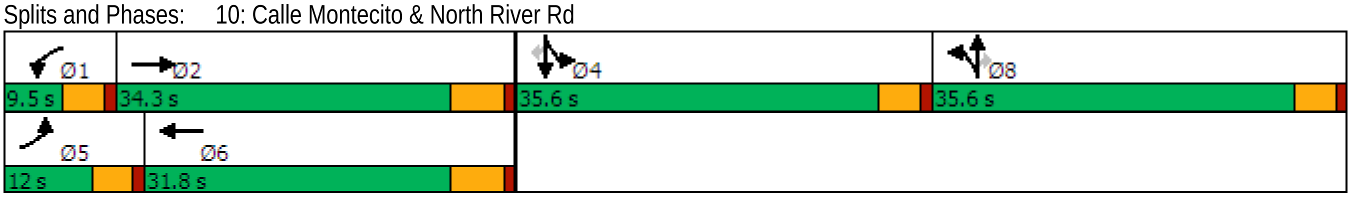
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	368	688	-	-	464	-	-	37
HCM Lane V/C Ratio	0.142	0.047	-	-	0.262	-	-	0.881
HCM Control Delay (s)	16.4	10.5	-	-	15.5	-	-	273.8
HCM Lane LOS	C	B	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.5	0.1	-	-	1	-	-	3.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	160	1030	10	800	5	40	5	80
Future Volume (vph)	160	1030	10	800	5	40	5	80
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						8		4
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	31.7	9.5	28.7	35.6	35.6	35.6	35.6
Total Split (s)	12.0	34.3	9.5	31.8	35.6	35.6	35.6	35.6
Total Split (%)	10.4%	29.8%	8.3%	27.7%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	3.5	4.7	3.5	4.7	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	4.5	5.7	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	7.8	38.2	5.2	27.1	10.4	10.4	15.0	15.0
Actuated g/C Ratio	0.10	0.48	0.06	0.34	0.13	0.13	0.19	0.19
v/c Ratio	1.02	0.67	0.10	0.97	0.17	0.14	0.57	0.23
Control Delay	114.8	23.1	45.1	47.4	32.9	1.0	37.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.8	23.1	45.1	47.4	32.9	1.0	37.5	5.1
LOS	F	C	D	D	C	A	D	A
Approach Delay		35.3		47.4	16.0		27.3	
Approach LOS		D		D	B		C	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 80.4	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Calle Montecito & North River Rd



10: Calle Montecito & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1030	10	10	800	240	30	5	40	170	5	80
Future Volume (veh/h)	160	1030	10	10	800	240	30	5	40	170	5	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1120	11	11	870	261	33	5	43	185	5	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	1660	16	25	977	293	139	21	142	256	7	234
Arrive On Green	0.11	0.46	0.46	0.01	0.36	0.36	0.09	0.09	0.09	0.15	0.15	0.15
Sat Flow, veh/h	1781	3605	35	1781	2695	807	1557	236	1585	1737	47	1585
Grp Volume(v), veh/h	174	552	579	11	573	558	38	0	43	190	0	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1725	1793	0	1585	1784	0	1585
Q Serve(g_s), s	6.5	16.3	16.3	0.4	20.4	20.5	1.3	0.0	1.7	6.8	0.0	3.3
Cycle Q Clear(g_c), s	6.5	16.3	16.3	0.4	20.4	20.5	1.3	0.0	1.7	6.8	0.0	3.3
Prop In Lane	1.00		0.02	1.00		0.47	0.87		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	199	818	858	25	644	625	160	0	142	263	0	234
V/C Ratio(X)	0.87	0.67	0.67	0.45	0.89	0.89	0.24	0.00	0.30	0.72	0.00	0.37
Avail Cap(c_a), veh/h	199	818	858	133	691	670	827	0	732	823	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	14.2	14.2	32.9	20.1	20.2	28.4	0.0	28.6	27.3	0.0	25.8
Incr Delay (d2), s/veh	32.3	2.2	2.1	12.2	13.1	13.6	0.8	0.0	1.2	3.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	6.2	6.5	0.3	10.0	9.8	0.6	0.0	0.7	3.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	16.4	16.3	45.0	33.2	33.8	29.2	0.0	29.8	31.0	0.0	26.8
LnGrp LOS	E	B	B	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1305			1142			81			277	
Approach Delay, s/veh		22.4			33.6			29.5			29.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	36.6		14.5	12.0	30.0		10.6				
Change Period (Y+Rc), s	4.5	5.7		4.6	4.5	5.7		4.6				
Max Green Setting (Gmax), s	5.0	28.6		31.0	7.5	26.1		31.0				
Max Q Clear Time (g_c+I1), s	2.4	18.3		8.8	8.5	22.5		3.7				
Green Ext Time (p_c), s	0.0	3.9		1.1	0.0	1.9		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		27.9
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	SBL	SBT	Ø1	Ø8
Lane Configurations							
Traffic Volume (vph)	130	1120	960	60	0		
Future Volume (vph)	130	1120	960	60	0		
Turn Type	Prot	NA	NA	Perm	NA		
Protected Phases	5	2	6		4	1	8
Permitted Phases				4			
Detector Phase	5	2	6	4	4		
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	6.0	6.0	5.0	6.0
Minimum Split (s)	9.5	32.7	29.7	21.6	21.6	9.5	35.6
Total Split (s)	24.0	45.4	40.4	35.6	35.6	19.0	35.6
Total Split (%)	24.0%	45.4%	40.4%	35.6%	35.6%	19%	36%
Yellow Time (s)	3.5	4.7	4.7	3.6	3.6	3.5	3.6
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	6.7	6.7	5.6	5.6		
Lead/Lag	Lead	Lag	Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	
Recall Mode	None	None	None	Min	Min	None	Min
Act Effct Green (s)	11.3	46.3	30.3	11.3	11.3		
Actuated g/C Ratio	0.16	0.66	0.43	0.16	0.16		
v/c Ratio	0.50	0.52	0.75	0.29	0.20		
Control Delay	36.3	8.4	22.8	30.2	0.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	36.3	8.4	22.8	30.2	0.8		
LOS	D	A	C	C	A		
Approach Delay		11.3	22.8		11.8		
Approach LOS		B	C		B		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 70.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 11: Redondo Dr & North River Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1120	0	0	960	80	0	0	0	60	0	100
Future Volume (veh/h)	130	1120	0	0	960	80	0	0	0	60	0	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	1217	0	0	1043	87	0	0	0	65	0	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	2195	0	4	1383	115	0	234	0	374	0	199
Arrive On Green	0.11	0.62	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.13	0.00	0.13
Sat Flow, veh/h	1781	3647	0	1781	3320	277	0	1870	0	1781	0	1585
Grp Volume(v), veh/h	141	1217	0	0	558	572	0	0	0	65	0	109
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1821	0	1870	0	1781	0	1585
Q Serve(g_s), s	3.7	9.5	0.0	0.0	12.8	12.8	0.0	0.0	0.0	1.6	0.0	3.1
Cycle Q Clear(g_c), s	3.7	9.5	0.0	0.0	12.8	12.8	0.0	0.0	0.0	1.6	0.0	3.1
Prop In Lane	1.00		0.00	1.00		0.15	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	2195	0	4	740	758	0	234	0	374	0	199
V/C Ratio(X)	0.74	0.55	0.00	0.00	0.75	0.75	0.00	0.00	0.00	0.17	0.00	0.55
Avail Cap(c_a), veh/h	726	2873	0	540	1251	1282	0	1211	0	1267	0	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	5.3	0.0	0.0	11.9	11.9	0.0	0.0	0.0	19.0	0.0	19.7
Incr Delay (d2), s/veh	5.5	0.2	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.1	0.0	0.0	4.3	4.4	0.0	0.0	0.0	0.6	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	5.5	0.0	0.0	13.5	13.4	0.0	0.0	0.0	19.2	0.0	22.0
LnGrp LOS	C	A	A	A	B	B	A	A	A	B	A	C
Approach Vol, veh/h		1358			1130			0			174	
Approach Delay, s/veh		7.7			13.4			0.0			21.0	
Approach LOS		A			B						C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	36.3		11.6	9.6	26.6		11.6				
Change Period (Y+Rc), s	4.5	6.7		5.6	4.5	6.7		* 5.6				
Max Green Setting (Gmax), s	14.5	38.7		30.0	19.5	33.7		* 31				
Max Q Clear Time (g_c+I1), s	0.0	11.5		5.1	5.7	14.8		0.0				
Green Ext Time (p_c), s	0.0	7.2		0.7	0.4	5.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

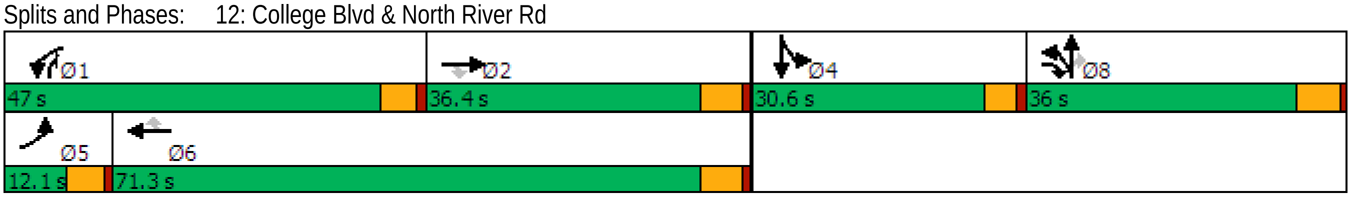
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	570	540	1320	490	70	40	1520	30	50
Future Volume (vph)	30	570	540	1320	490	70	40	1520	30	50
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	NA	pm+ov	Split	NA
Protected Phases	5	2	8	1	6		8	1	4	4
Permitted Phases			2			6		8		
Detector Phase	5	2	8	1	6	6	8	1	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	4.0	5.0	10.0	10.0	4.0	5.0	6.0	6.0
Minimum Split (s)	10.1	34.8	20.5	10.1	24.8	24.8	20.5	10.1	30.6	30.6
Total Split (s)	12.1	36.4	36.0	47.0	71.3	71.3	36.0	47.0	30.6	30.6
Total Split (%)	8.1%	24.3%	24.0%	31.3%	47.5%	47.5%	24.0%	31.3%	20.4%	20.4%
Yellow Time (s)	4.1	4.8	4.8	4.1	4.8	4.8	4.8	4.1	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.8	5.8	5.1	5.8	5.8	5.8	5.1	4.6	4.6
Lead/Lag	Lead	Lag		Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	27.1	59.0	42.3	67.8	67.8	30.5	78.7	11.6	11.6
Actuated g/C Ratio	0.05	0.21	0.45	0.32	0.52	0.52	0.23	0.60	0.09	0.09
v/c Ratio	0.37	0.84	0.67	1.29	0.29	0.09	1.36	0.84	0.21	0.36
Control Delay	76.3	62.0	12.1	173.5	20.6	3.3	214.8	17.8	59.2	60.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	62.0	12.1	173.5	20.6	3.3	214.8	17.8	59.2	60.2
LOS	E	E	B	F	C	A	F	B	E	E
Approach Delay		38.8			127.3		68.0			59.8
Approach LOS		D			F		E			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 130.5	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 83.1	Intersection LOS: F
Intersection Capacity Utilization 102.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: College Blvd & North River Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	570	540	1320	490	70	480	40	1520	30	50	5
Future Volume (veh/h)	30	570	540	1320	490	70	480	40	1520	30	50	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	620	587	1435	533	76	522	43	1652	33	54	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	835	740	1112	1884	840	383	32	1545	85	80	7
Arrive On Green	0.03	0.24	0.24	0.32	0.53	0.53	0.23	0.23	0.23	0.05	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1652	136	2790	1781	1686	156
Grp Volume(v), veh/h	33	620	587	1435	533	76	565	0	1652	33	0	59
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1788	0	1395	1781	0	1842
Q Serve(g_s), s	2.4	21.0	30.6	41.9	10.8	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Cycle Q Clear(g_c), s	2.4	21.0	30.6	41.9	10.8	3.1	30.2	0.0	30.2	2.3	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	48	835	740	1112	1884	840	415	0	1545	85	0	87
V/C Ratio(X)	0.69	0.74	0.79	1.29	0.28	0.09	1.36	0.00	1.07	0.39	0.00	0.67
Avail Cap(c_a), veh/h	96	835	740	1112	1884	840	415	0	1545	356	0	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.8	46.1	26.6	44.1	16.9	15.1	50.0	0.0	29.0	60.2	0.0	61.0
Incr Delay (d2), s/veh	16.4	3.6	5.9	137.4	0.1	0.0	178.0	0.0	43.9	2.9	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.7	20.7	39.0	4.4	1.1	33.9	0.0	32.3	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.2	49.7	32.6	181.5	17.0	15.1	228.0	0.0	72.9	63.1	0.0	69.7
LnGrp LOS	E	D	C	F	B	B	F	A	F	E	A	E
Approach Vol, veh/h		1240			2044			2217			92	
Approach Delay, s/veh		42.4			132.4			112.5			67.3	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.0	36.4		10.8	8.6	74.8		36.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		5.8				
Max Green Setting (Gmax), s	41.9	30.6		26.0	7.0	65.5		30.2				
Max Q Clear Time (g_c+I1), s	43.9	32.6		6.1	4.4	12.8		32.2				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			103.5
HCM 6th LOS			F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	100	120	2050	1760	70
Future Volume (vph)	30	100	120	2050	1760	70
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	32.6	11.5	11.5	21.7	33.8	33.8
Total Split (s)	32.6	11.6	11.6	67.4	55.8	55.8
Total Split (%)	32.6%	11.6%	11.6%	67.4%	55.8%	55.8%
Yellow Time (s)	3.6	4.1	4.1	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	5.8	5.8	5.8
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	17.1	6.6	68.2	53.8	53.8
Actuated g/C Ratio	0.14	0.21	0.08	0.83	0.66	0.66
v/c Ratio	0.13	0.33	0.47	0.76	0.82	0.07
Control Delay	31.2	25.9	43.9	10.4	17.9	6.0
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	31.2	25.9	43.9	10.9	17.9	6.0
LOS	C	C	D	B	B	A
Approach Delay	27.1			12.7	17.4	
Approach LOS	C			B	B	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 82
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 72.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: College Blvd & Buchanon Park

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	120	2050	1760	70
Future Volume (veh/h)	30	100	120	2050	1760	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	109	130	2228	1913	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	183	282	261	2689	2174	970
Arrive On Green	0.10	0.10	0.08	0.76	0.61	0.61
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	33	109	130	2228	1913	76
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	1.3	4.5	2.7	30.2	33.4	1.4
Cycle Q Clear(g_c), s	1.3	4.5	2.7	30.2	33.4	1.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	183	282	261	2689	2174	970
V/C Ratio(X)	0.18	0.39	0.50	0.83	0.88	0.08
Avail Cap(c_a), veh/h	676	721	304	2966	2408	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	26.8	32.8	5.9	12.0	5.8
Incr Delay (d2), s/veh	0.5	0.9	1.5	1.9	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.1	1.1	7.0	11.7	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.8	27.6	34.2	7.8	15.9	5.9
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	142			2358	1989	
Approach Delay, s/veh	28.4			9.2	15.5	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		61.6		12.2	10.7	50.9
Change Period (Y+Rc), s		5.8		4.6	5.1	5.8
Max Green Setting (Gmax), s		61.6		28.0	6.5	50.0
Max Q Clear Time (g_c+I1), s		32.2		6.5	4.7	35.4
Green Ext Time (p_c), s		18.3		0.5	0.1	9.7

Intersection Summary			
HCM 6th Ctrl Delay			12.6
HCM 6th LOS			B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	180	20	60	10	40	90	1930	50	1710	140
Future Volume (vph)	180	20	60	10	40	90	1930	50	1710	140
Turn Type	Perm	NA	Perm	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases		4		8		5	2	1	6	
Permitted Phases	4		8		8					6
Detector Phase	4	4	8	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	36.7	36.7	10.1	27.8	10.1	24.8	24.8
Total Split (s)	36.7	36.7	36.7	36.7	36.7	11.9	62.1	11.2	61.4	61.4
Total Split (%)	33.4%	33.4%	33.4%	33.4%	33.4%	10.8%	56.5%	10.2%	55.8%	55.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.1	4.8	4.1	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7	5.1	5.8	5.1	5.8	5.8
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	20.1	20.1		20.1	20.1	6.8	59.0	6.0	55.9	55.9
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.07	0.60	0.06	0.57	0.57
v/c Ratio	0.73	0.29		0.29	0.11	0.80	0.73	0.50	0.93	0.16
Control Delay	52.3	11.1		35.0	2.2	89.5	17.8	63.8	30.2	7.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	17.2	0.0
Total Delay	52.3	11.1		35.0	2.2	89.5	17.8	63.8	47.4	7.3
LOS	D	B		D	A	F	B	E	D	A
Approach Delay		36.6		23.2			20.9		44.9	
Approach LOS		D		C			C		D	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 98.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 32.3 Intersection LOS: C
Intersection Capacity Utilization 81.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 14: College Blvd & Adams St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	20	90	60	10	40	90	1930	100	50	1710	140
Future Volume (veh/h)	180	20	90	60	10	40	90	1930	100	50	1710	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	196	22	98	65	11	43	98	2098	109	54	1859	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	80	355	301	46	422	114	2723	141	70	1858	829
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.06	0.55	0.55	0.04	0.52	0.52
Sat Flow, veh/h	1350	299	1332	892	173	1585	1781	4971	257	1781	3554	1585
Grp Volume(v), veh/h	196	0	120	76	0	43	98	1434	773	54	1859	152
Grp Sat Flow(s),veh/h/ln	1350	0	1631	1066	0	1585	1781	1702	1824	1781	1777	1585
Q Serve(g_s), s	15.1	0.0	6.2	4.6	0.0	2.2	5.8	35.0	35.4	3.2	55.6	5.4
Cycle Q Clear(g_c), s	25.8	0.0	6.2	10.7	0.0	2.2	5.8	35.0	35.4	3.2	55.6	5.4
Prop In Lane	1.00		0.82	0.86		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	291	0	434	347	0	422	114	1865	999	70	1858	829
V/C Ratio(X)	0.67	0.00	0.28	0.22	0.00	0.10	0.86	0.77	0.77	0.78	1.00	0.18
Avail Cap(c_a), veh/h	338	0	491	393	0	477	114	1865	999	102	1858	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	30.9	34.5	0.0	29.4	49.3	18.8	18.9	50.6	25.4	13.4
Incr Delay (d2), s/veh	4.2	0.0	0.3	0.3	0.0	0.1	44.5	2.0	3.8	19.6	21.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.5	1.7	0.0	0.8	4.0	13.5	15.1	1.8	27.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	0.0	31.2	34.8	0.0	29.5	93.8	20.8	22.7	70.3	46.3	13.5
LnGrp LOS	D	A	C	C	A	C	F	C	C	E	F	B
Approach Vol, veh/h		316			119			2305			2065	
Approach Delay, s/veh		41.3			32.9			24.5			44.5	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	64.1		33.0	11.9	61.4		33.0				
Change Period (Y+Rc), s	5.1	5.8		* 4.7	5.1	5.8		* 4.7				
Max Green Setting (Gmax), s	6.1	56.3		* 32	6.8	55.6		* 32				
Max Q Clear Time (g_c+I1), s	5.2	37.4		27.8	7.8	57.6		12.7				
Green Ext Time (p_c), s	0.0	11.9		0.5	0.0	0.0		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		34.4
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	10	10	530	1830	5	1570
Future Volume (vph)	10	10	10	530	1830	5	1570
Turn Type	NA	NA	Perm	Prot	NA	Prot	NA
Protected Phases	4	8		5	2	1	6
Permitted Phases			8				
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	8.0	4.0	4.0	6.0	10.0	6.0	10.0
Minimum Split (s)	33.0	24.0	24.0	11.1	28.8	11.1	31.8
Total Split (s)	33.0	24.0	24.0	31.0	81.9	11.1	62.0
Total Split (%)	22.0%	16.0%	16.0%	20.7%	54.6%	7.4%	41.3%
Yellow Time (s)	4.0	4.0	4.0	4.1	4.8	4.1	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.1	6.8	5.1	6.8
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	None	Min
Act Effct Green (s)	27.1	13.1	13.1	25.9	84.1	6.0	55.3
Actuated g/C Ratio	0.19	0.09	0.09	0.18	0.59	0.04	0.39
v/c Ratio	0.92	0.60	0.04	0.93	0.72	0.07	0.96
Control Delay	68.7	78.1	0.3	80.4	24.0	70.4	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.7	78.1	0.3	80.4	24.0	70.4	56.3
LOS	E	E	A	F	C	E	E
Approach Delay	68.7	70.2			36.0		56.3
Approach LOS	E	E			D		E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 143.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.8	Intersection LOS: D
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: College Blvd & Via Cupeno

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	10	230	80	10	10	530	1830	120	5	1570	150
Future Volume (veh/h)	340	10	230	80	10	10	530	1830	120	5	1570	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	370	11	250	87	11	11	576	1989	130	5	1707	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	14	310	109	14	109	626	2755	179	14	1843	176
Arrive On Green	0.20	0.20	0.20	0.07	0.07	0.07	0.18	0.56	0.56	0.01	0.39	0.39
Sat Flow, veh/h	1781	67	1528	1590	201	1585	3456	4898	319	1781	4741	452
Grp Volume(v), veh/h	370	0	261	98	0	11	576	1380	739	5	1224	646
Grp Sat Flow(s),veh/h/ln	1781	0	1595	1791	0	1585	1728	1702	1813	1781	1702	1789
Q Serve(g_s), s	28.0	0.0	21.5	7.4	0.0	0.9	22.6	41.2	41.6	0.4	47.4	47.7
Cycle Q Clear(g_c), s	28.0	0.0	21.5	7.4	0.0	0.9	22.6	41.2	41.6	0.4	47.4	47.7
Prop In Lane	1.00		0.96	0.89		1.00	1.00		0.18	1.00		0.25
Lane Grp Cap(c), veh/h	361	0	323	123	0	109	626	1914	1020	14	1323	696
V/C Ratio(X)	1.02	0.00	0.81	0.79	0.00	0.10	0.92	0.72	0.73	0.37	0.93	0.93
Avail Cap(c_a), veh/h	361	0	323	246	0	218	648	1914	1020	77	1360	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	0.0	52.5	63.4	0.0	60.3	55.6	22.2	22.3	68.2	40.3	40.4
Incr Delay (d2), s/veh	53.9	0.0	14.0	10.9	0.0	0.4	18.1	1.3	2.6	16.0	10.8	18.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	0.0	9.9	3.8	0.0	0.4	11.4	16.5	18.1	0.2	21.7	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.9	0.0	66.5	74.3	0.0	60.7	73.7	23.6	24.9	84.2	51.1	58.6
LnGrp LOS	F	A	E	E	A	E	E	C	C	F	D	E
Approach Vol, veh/h		631			109			2695			1875	
Approach Delay, s/veh		91.4			72.9			34.7			53.7	
Approach LOS		F			E			C			D	

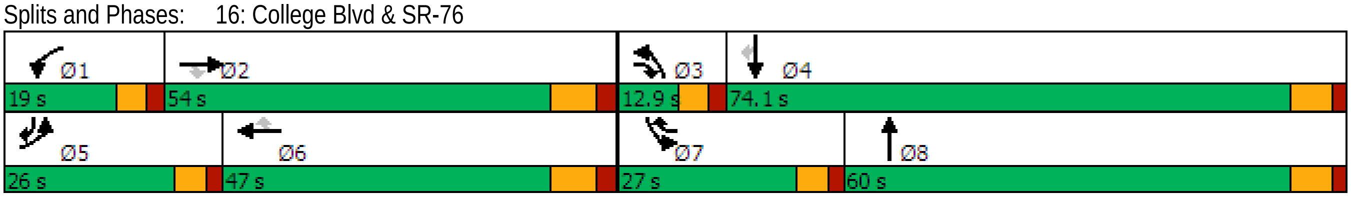
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	84.5		33.0	30.1	60.5		14.5				
Change Period (Y+Rc), s	5.1	6.8		5.0	5.1	6.8		5.0				
Max Green Setting (Gmax), s	6.0	75.1		28.0	25.9	55.2		19.0				
Max Q Clear Time (g_c+I1), s	2.4	43.6		30.0	24.6	49.7		9.4				
Green Ext Time (p_c), s	0.0	15.0		0.0	0.4	4.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			48.9
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	690	1650	70	410	1120	790	60	970	690	940	540
Future Volume (vph)	690	1650	70	410	1120	790	60	970	690	940	540
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	7	4	5
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	7	3	8	7	4	5
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	41.0	9.7	9.7	41.0	9.7	9.7	47.8	9.7	49.8	10.0
Total Split (s)	26.0	54.0	12.9	19.0	47.0	27.0	12.9	60.0	27.0	74.1	26.0
Total Split (%)	16.3%	33.8%	8.1%	11.9%	29.4%	16.9%	8.1%	37.5%	16.9%	46.3%	16.3%
Yellow Time (s)	3.7	5.5	3.7	3.7	5.5	3.7	3.7	4.8	3.7	4.8	3.7
All-Red Time (s)	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	8.0	5.7	5.7	8.0	5.7	5.7	6.8	5.7	6.8	5.7
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	20.3	46.0	61.0	13.3	39.0	68.3	7.0	53.2	21.3	67.5	94.6
Actuated g/C Ratio	0.13	0.29	0.38	0.08	0.24	0.43	0.04	0.33	0.13	0.42	0.59
v/c Ratio	1.72	1.23	0.11	1.56	0.98	1.17	0.43	1.34	1.64	0.68	0.61
Control Delay	373.5	155.4	2.4	314.4	81.2	126.2	83.7	197.5	338.3	40.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	373.5	155.4	2.4	314.4	81.2	126.2	83.7	197.5	338.3	40.6	21.2
LOS	F	F	A	F	F	F	F	F	F	D	C
Approach Delay		213.4			137.8			192.9		130.4	
Approach LOS		F			F			F		F	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.72	
Intersection Signal Delay: 167.3	Intersection LOS: F
Intersection Capacity Utilization 126.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 16: College Blvd & SR-76



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1650	70	410	1120	790	60	970	450	690	940	540
Future Volume (veh/h)	690	1650	70	410	1120	790	60	970	450	690	940	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	750	1793	76	446	1217	859	65	1054	489	750	1022	587
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1468	503	287	1245	597	102	791	357	460	1550	892
Arrive On Green	0.13	0.29	0.29	0.08	0.24	0.24	0.03	0.33	0.33	0.13	0.44	0.44
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	2379	1075	3456	3554	1585
Grp Volume(v), veh/h	750	1793	76	446	1217	859	65	780	763	750	1022	587
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1677	1728	1777	1585
Q Serve(g_s), s	20.3	46.0	5.5	13.3	37.9	39.0	3.0	53.2	53.2	21.3	36.4	41.1
Cycle Q Clear(g_c), s	20.3	46.0	5.5	13.3	37.9	39.0	3.0	53.2	53.2	21.3	36.4	41.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	438	1468	503	287	1245	597	102	591	558	460	1550	892
V/C Ratio(X)	1.71	1.22	0.15	1.55	0.98	1.44	0.64	1.32	1.37	1.63	0.66	0.66
Avail Cap(c_a), veh/h	438	1468	503	287	1245	597	156	591	558	460	1550	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	57.0	39.2	73.3	60.1	49.8	76.8	53.4	53.4	69.3	35.7	24.3
Incr Delay (d2), s/veh	329.4	106.0	0.1	265.2	20.3	206.5	6.4	155.6	177.1	293.4	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.1	34.2	2.2	16.5	18.7	58.0	1.4	49.2	49.8	28.2	16.1	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	399.2	163.0	39.3	338.5	80.4	256.4	83.2	209.0	230.5	362.8	36.8	26.0
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h		2619			2522			1608			2359	
Approach Delay, s/veh		227.0			186.0			214.1			137.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	54.0	10.4	76.6	26.0	47.0	27.0	60.0
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8
Max Green Setting (Gmax), s	* 13	46.0	* 7.2	67.3	* 20	39.0	* 21	53.2
Max Q Clear Time (g_c+I1), s	15.3	48.0	5.0	43.1	22.3	41.0	23.3	55.2
Green Ext Time (p_c), s	0.0	0.0	0.0	9.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	190.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	90	110	160	600	140	290	880	970	330	1140	70
Future Volume (vph)	90	110	160	600	140	290	880	970	330	1140	70
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	6.0	5.0	8.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	28.0	9.0	31.0	31.0	9.0	27.0	27.0
Total Split (s)	15.0	30.0	30.0	21.0	36.0	21.0	48.0	48.0	21.0	48.0	48.0
Total Split (%)	12.5%	25.0%	25.0%	17.5%	30.0%	17.5%	40.0%	40.0%	17.5%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.9	15.9	15.9	17.1	23.0	17.1	44.2	44.2	17.1	44.2	44.2
Actuated g/C Ratio	0.09	0.14	0.14	0.16	0.21	0.16	0.40	0.40	0.16	0.40	0.40
v/c Ratio	0.62	0.45	0.46	1.23	0.78	1.15	0.47	1.12	1.32	0.87	0.11
Control Delay	66.9	47.7	10.1	158.6	49.5	144.6	26.1	86.5	202.7	39.6	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	47.7	10.1	158.6	49.5	144.6	26.1	86.5	202.7	39.6	1.5
LOS	E	D	B	F	D	F	C	F	F	D	A
Approach Delay		35.8			123.9		69.5			72.8	
Approach LOS		D			F		E			E	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 110.2
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.32
Intersection Signal Delay: 77.8 Intersection LOS: E
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 17: North River Rd/Vandergrift Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	110	160	600	140	140	290	880	970	330	1140	70
Future Volume (veh/h)	90	110	160	600	140	140	290	880	970	330	1140	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	120	174	652	152	152	315	957	1054	359	1239	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	251	213	541	190	190	279	2070	642	279	1440	642
Arrive On Green	0.07	0.13	0.13	0.16	0.22	0.22	0.16	0.41	0.41	0.16	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	3456	858	858	1781	5106	1585	1781	3554	1585
Grp Volume(v), veh/h	98	120	174	652	0	304	315	957	1054	359	1239	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	0	1716	1781	1702	1585	1781	1777	1585
Q Serve(g_s), s	5.9	6.4	11.6	17.0	0.0	18.2	17.0	14.9	44.0	17.0	34.6	3.3
Cycle Q Clear(g_c), s	5.9	6.4	11.6	17.0	0.0	18.2	17.0	14.9	44.0	17.0	34.6	3.3
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	251	213	541	0	380	279	2070	642	279	1440	642
V/C Ratio(X)	0.79	0.48	0.82	1.20	0.00	0.80	1.13	0.46	1.64	1.29	0.86	0.12
Avail Cap(c_a), veh/h	180	448	380	541	0	506	279	2070	642	279	1440	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	43.5	45.7	45.8	0.0	40.0	45.8	23.6	32.3	45.8	29.5	20.2
Incr Delay (d2), s/veh	13.8	1.4	7.6	108.7	0.0	6.6	93.3	0.7	295.3	153.5	6.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.1	5.0	15.4	0.0	8.3	14.7	6.1	68.9	19.3	15.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	44.9	53.3	154.5	0.0	46.6	139.1	24.4	327.6	199.3	36.4	20.5
LnGrp LOS	E	D	D	F	A	D	F	C	F	F	D	C
Approach Vol, veh/h		392			956			2326			1674	
Approach Delay, s/veh		53.3			120.2			177.3			70.6	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	48.0	21.0	18.6	21.0	48.0	11.5	28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	44.0	17.0	26.0	17.0	44.0	11.0	32.0
Max Q Clear Time (g_c+I1), s	19.0	46.0	19.0	13.6	19.0	36.6	7.9	20.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	4.9	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	124.6
HCM 6th LOS	F

Appendix T

Signal Warrant Worksheet

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE ____
CALC ____ DATE ____
CHK ____ DATE ____

DIST ____ CO ____ RTE ____ PM ____

Major St: N. RIVER ROAD — Critical Approach Speed POSTED 45 mph
Minor St: PROJECT DWY/RIVERVIEW WAY — Critical Approach Speed ____ mph

Speed limit or critical speed on major street traffic > 40 mph........ ☒ or
In built up area of isolated community of < 10,000 population........ ☐ } **RURAL (R)**
☐ **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN........ RURAL....✓....	Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume Satisfied ____ Not Satisfied ✓	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1........ / 1........	8,000	5,600	2,400	1,680
2 or More........ / 1........	9,600	6,720	2,400	1,680
2 or More..E=19,132.. / 2 or More....1,600....	9,600	6,720 ✓	3,200	2,240 ✗
1........ / 2 or More........	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied ✓ Not Satisfied ____	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1........ / 1........	12,000	8,400	1,200	850
2 or More........ / 1........	14,400	10,080	1,200	850
2 or More.E=19,132... / 2 or More...1,600.....	14,400	10,080 ✓	1,600	1,120 ✓
1........ / 2 or More........	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied ____ Not Satisfied ✓ No one condition satisfied, but following conditions fulfilled 80% or more.......... NO (A) YES (B)	2 CONDITIONS 80%		2 CONDITIONS 80%	

80% = 1792

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

PROJECT ADT = 3,200 (IN + OUT)

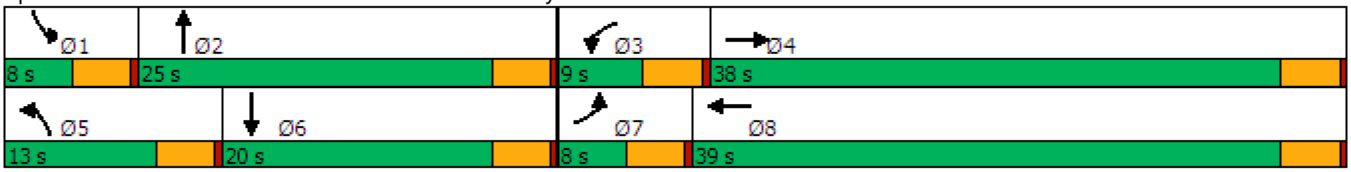
OUT = $\frac{1}{2}$(3,200) = 1,600 ADT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	720	26	1130	102	0	20	0
Future Volume (vph)	30	720	26	1130	102	0	20	0
Lane Group Flow (vph)	33	811	28	1239	111	111	22	54
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0	8.0	20.0	8.0	20.0
Total Split (s)	8.0	38.0	9.0	39.0	13.0	25.0	8.0	20.0
Total Split (%)	10.0%	47.5%	11.3%	48.8%	16.3%	31.3%	10.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	4.5	26.2	5.6	26.5	8.6	12.9	4.5	6.2
Actuated g/C Ratio	0.08	0.49	0.10	0.50	0.16	0.24	0.08	0.12
v/c Ratio	0.22	0.47	0.15	0.71	0.39	0.20	0.15	0.16
Control Delay	33.5	10.9	30.9	13.9	29.9	0.8	32.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	10.9	30.9	13.9	29.9	0.8	32.4	1.0
LOS	C	B	C	B	C	A	C	A
Approach Delay		11.8		14.3		15.3		10.1
Approach LOS		B		B		B		B
Queue Length 50th (ft)	11	78	9	142	34	0	7	0
Queue Length 95th (ft)	40	156	35	267	91	0	30	0
Internal Link Dist (ft)		330		1076		405		819
Turn Bay Length (ft)	100		140					
Base Capacity (vph)	149	2341	187	2397	336	835	149	652
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.15	0.52	0.33	0.13	0.15	0.08

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 53.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 50.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: North River Rd & Riverview Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	720	26	26	1130	10	102	0	102	20	0	50
Future Volume (veh/h)	30	720	26	26	1130	10	102	0	102	20	0	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	783	28	28	1228	11	111	0	111	22	0	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1600	57	47	1636	15	144	0	233	38	0	138
Arrive On Green	0.03	0.46	0.46	0.03	0.45	0.45	0.08	0.00	0.15	0.02	0.00	0.09
Sat Flow, veh/h	1781	3500	125	1781	3609	32	1781	0	1585	1781	0	1585
Grp Volume(v), veh/h	33	397	414	28	605	634	111	0	111	22	0	54
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1865	1781	0	1585	1781	0	1585
Q Serve(g_s), s	0.8	7.2	7.2	0.7	12.9	12.9	2.8	0.0	2.9	0.6	0.0	1.5
Cycle Q Clear(g_c), s	0.8	7.2	7.2	0.7	12.9	12.9	2.8	0.0	2.9	0.6	0.0	1.5
Prop In Lane	1.00		0.07	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	53	812	845	47	806	845	144	0	233	38	0	138
V/C Ratio(X)	0.62	0.49	0.49	0.60	0.75	0.75	0.77	0.00	0.48	0.58	0.00	0.39
Avail Cap(c_a), veh/h	155	1316	1368	194	1354	1421	349	0	725	155	0	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.0	8.7	8.7	22.1	10.4	10.4	20.7	0.0	18.0	22.3	0.0	19.8
Incr Delay (d2), s/veh	11.1	0.5	0.4	11.8	1.4	1.4	8.3	0.0	1.5	13.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.2	2.3	0.4	4.0	4.2	1.4	0.0	1.1	0.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	9.2	9.2	33.9	11.8	11.8	29.0	0.0	19.5	35.5	0.0	21.6
LnGrp LOS	C	A	A	C	B	B	C	A	B	D	A	C
Approach Vol, veh/h		844			1267			222			76	
Approach Delay, s/veh		10.1			12.3			24.2			25.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	10.7	5.2	25.0	7.7	8.0	5.4	24.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	21.0	5.0	34.0	9.0	16.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	2.6	4.9	2.7	9.2	4.8	3.5	2.8	14.9				
Green Ext Time (p_c), s	0.0	0.3	0.0	3.5	0.1	0.1	0.0	5.9				
Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	1220	112	900	48	0	20	0
Future Volume (vph)	30	1220	112	900	48	0	20	0
Lane Group Flow (vph)	33	1448	122	1000	52	52	22	11
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0	8.0	20.0	8.0	20.0
Total Split (s)	9.0	31.0	14.0	36.0	8.0	22.0	8.0	22.0
Total Split (%)	12.0%	41.3%	18.7%	48.0%	10.7%	29.3%	10.7%	29.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	5.1	27.8	8.6	34.5	4.1	8.5	4.1	5.7
Actuated g/C Ratio	0.09	0.50	0.15	0.62	0.07	0.15	0.07	0.10
v/c Ratio	0.20	0.83	0.45	0.46	0.40	0.11	0.17	0.03
Control Delay	30.0	21.0	29.3	8.1	38.3	0.5	30.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	21.0	29.3	8.1	38.3	0.5	30.9	0.2
LOS	C	C	C	A	D	A	C	A
Approach Delay		21.2		10.4		19.4		20.6
Approach LOS		C		B		B		C
Queue Length 50th (ft)	12	259	42	78	19	0	8	0
Queue Length 95th (ft)	36	#417	87	173	#58	0	28	0
Internal Link Dist (ft)		330		1076		405		819
Turn Bay Length (ft)	100		140		100		100	
Base Capacity (vph)	162	1741	325	2266	130	692	130	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.83	0.38	0.44	0.40	0.08	0.17	0.02

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 55.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	

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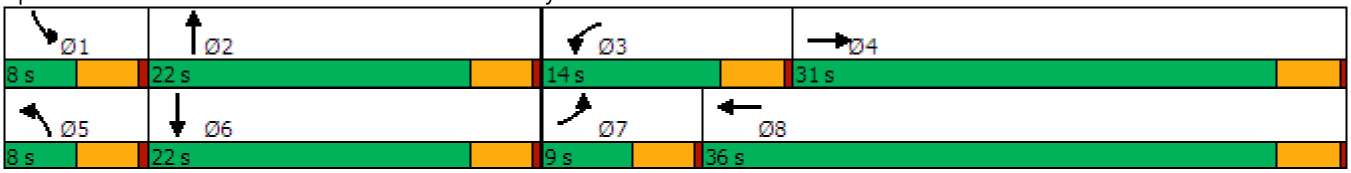
Queue shown is maximum after two cycles.

Splits and Phases: 9: North River Rd & Riverview Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1220	112	112	900	20	48	0	48	20	0	10
Future Volume (veh/h)	30	1220	112	112	900	20	48	0	48	20	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1326	122	122	978	22	52	0	52	22	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	1561	143	160	1899	43	73	0	157	37	0	125
Arrive On Green	0.03	0.47	0.47	0.09	0.53	0.53	0.04	0.00	0.10	0.02	0.00	0.08
Sat Flow, veh/h	1781	3291	302	1781	3553	80	1781	0	1585	1781	0	1585
Grp Volume(v), veh/h	33	714	734	122	489	511	52	0	52	22	0	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1816	1781	1777	1856	1781	0	1585	1781	0	1585
Q Serve(g_s), s	0.9	17.9	18.1	3.4	8.9	8.9	1.5	0.0	1.5	0.6	0.0	0.3
Cycle Q Clear(g_c), s	0.9	17.9	18.1	3.4	8.9	8.9	1.5	0.0	1.5	0.6	0.0	0.3
Prop In Lane	1.00		0.17	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	52	843	861	160	950	992	73	0	157	37	0	125
V/C Ratio(X)	0.63	0.85	0.85	0.76	0.51	0.51	0.71	0.00	0.33	0.59	0.00	0.09
Avail Cap(c_a), veh/h	176	948	969	352	1123	1173	141	0	564	141	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	11.7	11.7	22.5	7.6	7.6	24.0	0.0	21.2	24.6	0.0	21.6
Incr Delay (d2), s/veh	11.9	6.6	6.8	7.4	0.4	0.4	12.1	0.0	1.2	13.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.9	7.2	1.6	2.6	2.7	0.8	0.0	0.6	0.4	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	18.3	18.5	29.9	8.0	8.0	36.0	0.0	22.5	38.3	0.0	21.9
LnGrp LOS	D	B	B	C	A	A	D	A	C	D	A	C
Approach Vol, veh/h		1481			1122			104			33	
Approach Delay, s/veh		18.8			10.4			29.3			32.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	9.0	8.5	28.0	6.1	8.0	5.5	31.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	10.0	27.0	4.0	18.0	5.0	32.0
Max Q Clear Time (g_c+I1), s	2.6	3.5	5.4	20.1	3.5	2.3	2.9	10.9
Green Ext Time (p_c), s	0.0	0.1	0.1	3.9	0.0	0.0	0.0	4.5

Intersection Summary		
HCM 6th Ctrl Delay		15.9
HCM 6th LOS		B

APPENDIX Q
VEHICLE MILES TRAVELED ANALYSIS

Tierra Norte Residential Development Plan
Southside of N. River Rd btw Ave Descanso and Calle Montecito
City of Oceanside
February 4, 2022

Vehicle Miles Traveled Analysis

Prepared for:

The Lightfoot Planning Group
5900 Pasteur Court, Suite 110
Carlsbad, CA 92008

Prepared by:

LOS Engineering, Inc.
11622 El Camino Real Suite 100 San Diego, CA 92130
Phone 619-890-1253

Job #1533

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Appendices

1.0 Introduction

The project is a General Plan Amendment (GPA) and rezone from light industrial uses to residential on two parcels for a total of 25.6 acres (Kawano parcel 9.7 acres and Nagata parcel 15.9 acres). The application includes a Planned Block Development Plan which would establish development criteria and allow for future residential development of up to 400 dwelling units. Therefore, a site plan is not available for the project site. A maximum of 400 dwelling units is proposed for a density of 15.6 units per acre (400 units / 25.6 acres). The site has historically been used for agricultural, packing, and shipping uses.

The site is located at 4617 and 4665 N. River Road in Oceanside, California. The general location of the project is shown in **Figure 1**. An aerial reference is shown in **Figure 2**.

This report includes a Vehicle Miles Traveled (VMT) analysis to determine if there is a potential California Environmental Quality Act (CEQA) VMT transportation impact.

Figure 1: Project Location

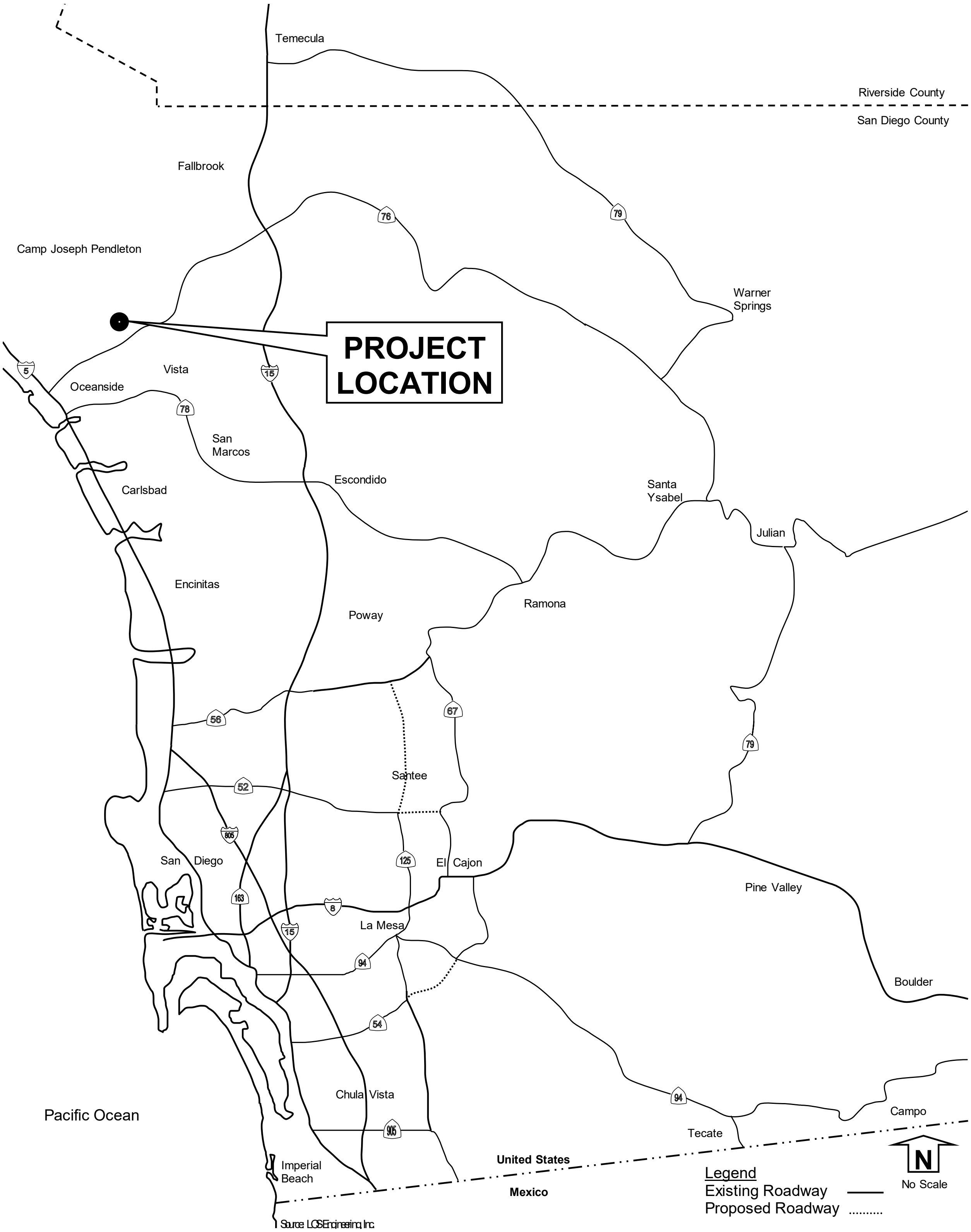


Figure 2: Aerial of Project Site

2.0 Vehicle Miles Traveled

A VMT analysis is required to satisfy the CEQA guidelines that utilize VMT as the measure of effectiveness for determining transportation impacts. The California Governor's Office of Planning and Research (OPR) Technical Advisory developed guidance on implementing Senate Bill 743 (SB 743) that shifts the transportation impact measure of effectiveness from Level of Service (LOS) to VMT. The OPR *Transportation Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018 states on page 8 "As noted above, lead agencies have the discretion to set or apply their own thresholds of significance". Excerpts from the OPR Technical Advisory are included in **Appendix A**.

The City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020 documents a threshold of 500 project Average Daily Traffic (ADT) if inconsistent with the General Plan and 1,000 project ADT if consistent with the General Plan as the trigger for requiring a VMT analysis. Excerpts from the City of Oceanside Guidelines are included in **Appendix B**. This project with up to 400 dwelling units at 8 ADT per dwelling unit is calculated to generate up to 3,200 ADT and is required to prepare a VMT analysis.

The City of Oceanside has developed a Project Information Form (PIF) to facilitate the screening of project requirements. A completed PIF for this project is included in **Appendix C**.

2.1 VMT Significance Criteria

Residential projects use VMT per capita to define a significant transportation impact when a project exceeds a level of 15% below existing VMT (i.e. greater than 85% of the regional mean). The OPR Technical Advisory *On Evaluating Transportation Impacts in CEQA* (December 2018) outlines the significance criteria on page 15 of the Advisory:

> "**Recommended threshold for residential projects**: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the [Sustainable Communities Strategy] SCS for that city, and should be consistent with the SCS."

The City of Oceanside guideline is consistent with the OPR significance criteria of 15% below the regional mean as shown in **Table 1**.

TABLE 1: CITY OF OCEANSIDE PROJECT THRESHOLDS

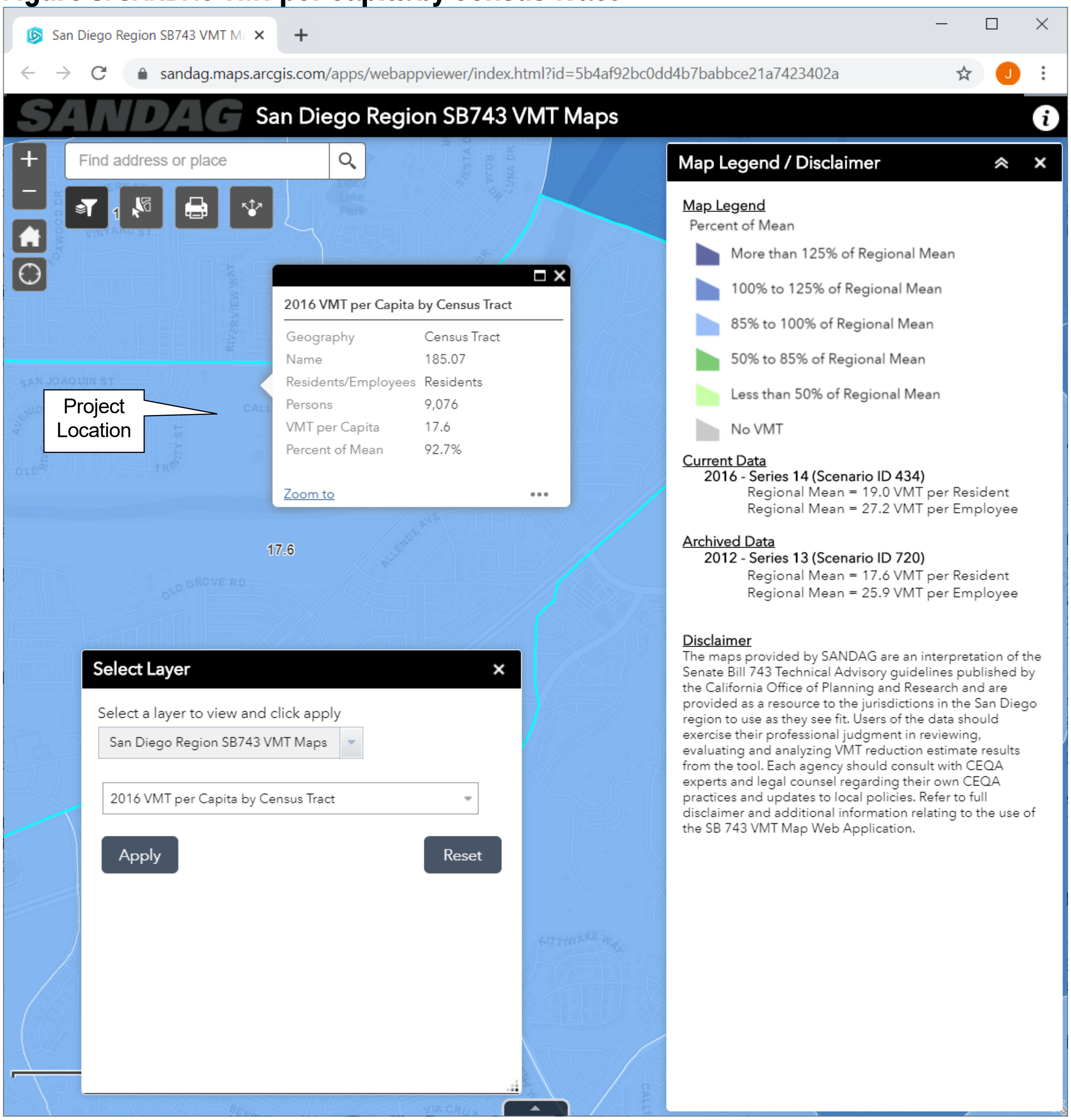
Project Type	Metric	Significance Thresholds
Residential	Resident VMT/Capita	15% below regional average

Source: City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020.

2.2 Residential VMT per Capita Analysis

OPR and the City of Oceanside provide a map based VMT screening option for residential projects. The San Diego Regional Association of Governments (SANDAG) provides a map based VMT model for the San Diego region that includes the City of Oceanside. As shown in **Figure 3**, <u>the project location for residential VMT per Capita by Census Tract is at 92.7% of the regional mean; therefore, the project exceeds the 85% significance threshold and is considered to have a significant transportation VMT impact. The project exceeds the VMT threshold by 7.8%.</u>

Figure 3: SANDAG VMT per Capita by Census Tract



2.3 Proposed VMT Mitigation

The City of Oceanside *Traffic Impact Analysis Guidelines* recommends use of VMT reduction methodologies by SANDAG, the California Air Resources Board (CARB), or the California Air Pollution Control Officers Association (CAPCOA).

The CAPCOA *Quantifying Greenhouse Gas Mitigation Measures A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, August 2010 and the SANDAG Mobility Management VMT Reduction Calculator Tool were reviewed for applicability based on the project's characteristics. The following two CAPCOA VMT reduction measures were applied (CAPCOA excerpts included in **Appendix D**):

1) LUT-1: Increase Residential Density. Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.

2) SDT-1: Provide Pedestrian Network Improvements. Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

The LUT-1 VMT reduction is calculated based on the number of housing units per acre. The project with 400 housing units divided by the project site of approximately 25.6 acres equals 15.6 dwelling units per acre. The SDT-1 VMT reduction is based on the project adding a sidewalk along the project frontage on N. River Road and throughout the site once a site plan is developed. The individual CAPCOA VMT reductions are shown in **Table 2**.

TABLE 2: CAPCOA VMT REDUCTION MEASURES

VMT Mitigation Measure	VMT % Reduction Range	Application	Project VMT % Reduction
LUT-1. Increase Residential Density	1.5%-30.0%	% VMT Reduction = ((15.6 project du/ac - 7.6 du/ac per CAPCOA) / 7.6 du/ac per CAPCOA) x 0.07 constant per CAPCOA	7.4%
SDT-1. Provide Pedestrian Network Improvements	0%-2%	% VMT Reduction for extent of pedestrian accommodations within project site and connecting off-site	2.0%

Source: CAPCOA 2010

VMT reduction measures are not directly additive and requires application of a multiplicative formula to account for measure redundancy. The multiplicative formula is as follows:

Overall VMT % Reduction = 1-(1-A)*(1-B)…
Where A, B are the individual mitigation measures.

For this project the overall VMT % Reduction = 1-(1-0.074)*(1-0.02) = 0.093 = 9.3%

As shown in **Table 3**, the project transportation impact is mitigated to below a level of significance because the final VMT of 83.4% is less than 85%.

TABLE 3: PROJECT VMT MITIGATION RESULTS

Project VMT	Mitigation VMT % Reduction	VMT after Mitigation	Is Project VMT below 85% and Mitigated?
92.7%	9.3%	83.4%	Yes

In addition to the above mitigation measures, the project applicant proposes to implement Transportation Demand Management (TDM) strategies to further reduce single occupant vehicle use through promoting alternative modes of transportation. The following TDM plan will provide the means to disseminate information to residents to learn about and use alternative forms of transportation other than single occupancy vehicles. The following TDM elements (to be implemented by the developer at the time of product sales) will be provided during the sales phase and can be incorporated into the project conditions of approval.

1) Provide information about the SANDAG's iCommute program (www.icommutesd.com) and encourage carpooling.

2) Develop and/or promote bicycle usage through a bikeshare program to help reduce vehicle usage and demand for parking by providing users with on-demand access to bikes for short-term rental, contribute to electric bicycle charging stations, contribute to bicycle infrastructure improvements, and disseminate a bicycle riders guide to make it easier for people to bike to work and/or retail destinations.

3) Provide pedestrian improvements such as a connection from the project site to the north side of the San Luis Rey River trail; encourage residents to walk by providing mapped walking routes; promoting walking groups; and providing incentives. Develop a bicycle riders guide.

4) Provide information about maps, routes, and schedules for public transit.

3.0 Conclusion

This VMT analysis was based on guidance from the Governor's OPR Technical Advisory and the City of Oceanside *Draft Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020. OPR developed guidance for implementing Senate Bill 743 (SB 743) requirements that shifts the transportation impact measure of effectiveness from Level of Service (LOS) to VMT. The City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020 documents a threshold of 500 project Average Daily Traffic (ADT) if inconsistent with the General Plan and 1,000 project ADT if consistent with the General Plan as the trigger for requiring a VMT analysis. This project with 3,200 ADT is required to prepare a VMT analysis.

The threshold for a VMT impact is defined when a project exceeds a level of 15% below the existing VMT (i.e. greater than 85% of the regional mean) or is considered to shorten trips. The San Diego Regional Association of Governments (SANDAG) provides a map based VMT model for the San Diego region that includes the City of Oceanside. The project site is located in a Census Tract with a VMT per Capita at 92.7% of the regional mean; therefore, the project exceeds the 85% significance threshold and is considered to have a significant transportation VMT impact. <u>The transportation VMT impact is mitigated to below a level of significance with a final VMT of 83.4%, which is less than 85% of the regional mean through the application of CAPCOA measures LUT-1 Increase Residential Density and SDT-1 Provide Pedestrian Network Improvements.</u>

In addition to the above mitigation measures, the project applicant proposes to implement Transportation Demand Management (TDM) strategies to further reduce single occupant vehicle use through promoting alternative modes of transportation. The following TDM plan will provide the means to disseminate information to residents to learn about and use alternative forms of transportation other than single occupancy vehicles. The following TDM elements (to be implemented by the developer at the time of product sales) will be provided during the sales phase and can be incorporated into the project conditions of approval.

1) Provide information about the SANDAG's iCommute program (<u>www.icommutesd.com</u>) and encourage carpooling.

2) Develop and/or promote bicycle usage through a bikeshare program to help reduce vehicle usage and demand for parking by providing users with on-demand access to bikes for short-term rental, contribute to electric bicycle charging stations, contribute to bicycle infrastructure improvements, and disseminate a bicycle riders guide to make it easier for people to bike to work and/or retail destinations.

3) Provide pedestrian improvements such as a connection from the project site to the north side of the San Luis Rey River trail; encourage residents to walk by providing mapped walking routes; promoting walking groups; and providing incentives. Develop a bicycle riders guide.

4) Provide information about maps, routes, and schedules for public transit.

Appendix A

Excerpts from OPR Technical Advisory

TECHNICAL ADVISORY

ON EVALUATING TRANSPORTATION IMPACTS IN CEQA

December 2018

D. General Principles to Guide Consideration of VMT

SB 743 directs OPR to establish specific "criteria for determining the significance of transportation impacts of projects[.]" (Pub. Resources Code, § 21099, subd. (b)(1).) In establishing this criterion, OPR was guided by the general principles contained within CEQA, the CEQA Guidelines, and applicable case law.

To assist in the determination of significance, many lead agencies rely on "thresholds of significance." The CEQA Guidelines define a "threshold of significance" to mean "an identifiable **quantitative, qualitative**[12] **or performance level** of a particular environmental effect, non-compliance with which means the effect will ***normally*** be determined to be significant by the agency and compliance with which means the effect ***normally*** will be determined to be less than significant." (CEQA Guidelines, § 15064.7, subd. (a) (emphasis added).) Lead agencies have discretion to develop and adopt their own, or rely on thresholds recommended by other agencies, "provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." (*Id*. at subd. (c); *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) Substantial evidence means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (*Id*. at § 15384 (emphasis added); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-1109.)

Additionally, the analysis leading to the determination of significance need not be perfect. The CEQA Guidelines describe the standard for adequacy of environmental analyses:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to **make a decision which intelligently takes account of environmental consequences**. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is **reasonably feasible**. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The **courts have looked not for perfection** but for **adequacy**, **completeness**, and a **good faith effort** at full disclosure.

(CEQA Guidelines, § 15151 (emphasis added).)

These general principles guide OPR's recommendations regarding thresholds of significance for VMT set forth below.

[12] Generally, qualitative analyses should only be conducted when methods do not exist for undertaking a quantitative analysis.

E. Recommendations Regarding Significance Thresholds

As noted above, lead agencies have the discretion to set or apply their own thresholds of significance. (*Center for Biological Diversity v. California Dept. of Fish & Wildlife* (2015) 62 Cal.4th 204, 218-223 [lead agency had discretion to use compliance with AB 32's emissions goals as a significance threshold]; *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th at p. 1068.) However, Section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of greenhouse gas emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. It further directed OPR to prepare and develop criteria for determining significance. (Pub. Resources Code, § 21099, subd. (b)(1).) This section provides OPR's suggested thresholds, as well as considerations for lead agencies that choose to adopt their own

The VMT metric can support the three statutory goals: "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, *and* a diversity of land uses." (Pub. Resources Code, § 21099, subd. (b)(1), emphasis added.) However, in order for it to promote and support all three, lead agencies should select a significance threshold that aligns with state law on all three. State law concerning the development of multimodal transportation networks and diversity of land uses requires planning for and prioritizing increases in complete streets and infill development, but does not mandate a particular depth of implementation that could translate into a particular threshold of significance. Meanwhile, the State has clear quantitative targets for GHG emissions reduction set forth in law and based on scientific consensus, and the depth of VMT reduction needed to achieve those targets has been quantified. Tying VMT thresholds to GHG reduction also supports the two other statutory goals. Therefore, to ensure adequate analysis of transportation impacts, OPR recommends using quantitative VMT thresholds linked to GHG reduction targets when methods exist to do so.

Various legislative mandates and state policies establish quantitative greenhouse gas emissions reduction targets. For example:

- Assembly Bill 32 (2006) requires statewide GHG emissions reductions to 1990 levels by 2020 and continued reductions beyond 2020.
- Senate Bill 32 (2016) requires at least a 40 percent reduction in GHG emissions from 1990 levels by 2030.
- Pursuant to Senate Bill 375 (2008), the California Air Resources Board GHG emissions reduction targets for metropolitan planning organizations (MPOs) to achieve based on land use patterns and transportation systems specified in Regional Transportation Plans and Sustainable Community Strategies (RTP/SCS). Current targets for the State's largest MPOs call for a 19 percent reduction in GHG emissions from cars and light trucks from 2005 emissions levels by 2035.
- Executive Order B-30-15 (2015) sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.

Appendix B

Excerpts from City of Oceanside VMT and LOS Guidelines

City of Oceanside

Traffic Impact Analysis Guidelines for

Vehicle Miles Traveled (VMT) and Level of Service Assessment

August 2020
Final Version

city of OCEANSIDE CA

Trip Distribution / Assignment Procedure

Typically, two methods are used to determine trip distribution and assignment for transportation analysis and are considered acceptable by the City.

- The first method utilizes engineering judgement based on existing traffic data and land use patterns. This method requires the consultant to provide a map with project distribution and trip assignments to the City for review prior to conducting analysis.

- The second method utilizes the SANDAG Regional Travel Demand Model to perform a select zone or link analysis**. This approach is typically used for larger projects and shall be used for any project that generates over 2,400 ADT**.

Once trip distribution and assignment assumptions are submitted to the City, the City will review and provide feedback on assumptions. If necessary, the developer or consultant may coordinate with the City Traffic Engineer to discuss trip distribution and assignment for any clarification or considerations to travel patterns that are not readily apparent.

7.0 SCREENED OUT PROJECTS

SB 743 eliminates the need for some projects to be analyzed for CEQA purposes that support VMT reduction, these projects are considered screened out for VMT analysis. Screened out is defined as projects not needed to be analyzed for CEQA purposes that already support VMT reduction.

The projects listed in **Table 2** are presumed to be considered VMT-reducing projects. The projects listed are either locally serving or are based on substantial evidence provided by the OPR Technical Advisory Committee supporting SB 743 implementation. A project may be required to conduct a VMT analysis at the discretion of City Staff if it is unclear the project qualifies as screened out or based on the City Traffic Engineer’s discretion.

Table 2 – Screened Out Projects

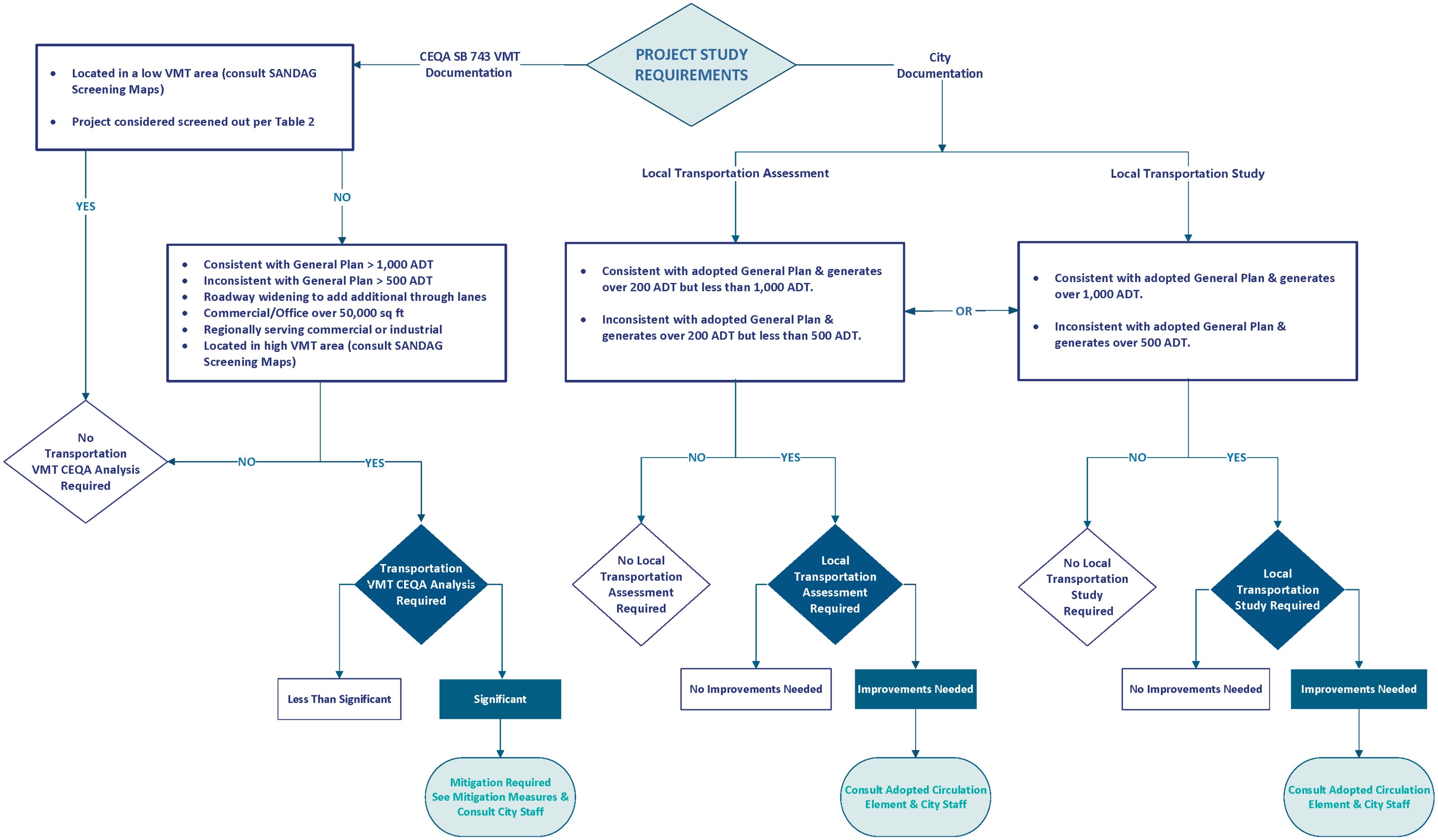
Project Type
Projects located in a Transit Priority Areas (TPA) or Smart Growth Opportunity Area as identified in the most recent SANDAG San Diego Forward Regional Plan and is consistent with the General Plan at the time of project application. (1)(2)
Projects located in a low-VMT generating area identified on the most recent SANDAG SB 743 VMT Screening map
Locally serving K-12 schools
Day care centers
Local parks
Locally serving retail uses less than 50,000 square feet, including: gas stations, banks, restaurants, grocery stores, and shopping centers
Community institutions (Public libraries, fire stations, local government)
Locally serving hotels (e.g. non-destination hotels, non-regionally serving)
Student housing projects on or adjacent to college campuses
Local serving community colleges that are consistent with the assumptions noted in the most recent SANDAG Regional Transportation Plan/Sustainable Communities Strategy
Affordable housing projects (3)
Assisted living facilities
Senior housing (as defined by HUD)
Transit projects
Bike projects
Pedestrian projects
Safety improvement projects (e.g. RRFBs and high visibility crosswalks at uncontrolled locations, pedestrian count down timers, additionally projects identified through the Highway Safety Improvement Program)
Safe Routes to School
Projects generating less than 500 daily vehicle trips (if inconsistent with adopted General Plan)
Projects generating less than 1,000 daily vehicle trips (if consistent with adopted General Plan)

(1) Projects located in a TPA must be able to access the transit station within a ½ mile walking distance or 6 minute walk continuously without discontinuity of sidewalk or obstructions to the route. Qualifying transit stops means a site containing an existing rail transit station served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (OPR, 2017). A high-quality transit corridor may also be considered if a corridor with fixed route bus service has service intervals no longer than 15 minutes during peak commute hours (OPR, 2017).
(2) Smart Growth Opportunity Area Map is provided in **Appendix B**. The most recent version available shall be used.
(3) If a project is a mix of affordable housing and market rate housing or unscreened use, only the affordable housing component would qualify as screened out. Additionally, any removal of affordable housing automatically requires CEQA VMT analysis.

8.0 Determining Project Study Requirements

Figure 8-1 helps guide development projects in determining the requirements from a local and state perspective in order to help determine study requirements. The screening flowchart indicates an overview of the circumstances where a detailed CEQA VMT analysis would or would not be required and when a project would require a Local Transportation Study or Local Transportation Assessment. The City maintains the discretion to require a project to conduct additional analysis if needed.

Figure 8-1 Project Study Requirements



* Projects are not confined to what is listed above and will need to be coordinated with City Staff to determine study requirements for developments not listed.
This flowchart is a generalization, it is up to the City's discretion to determine if additional analyses will be required and if potential mitigation or improvements are acceptable.

9.0 San Diego Regional Guidelines For VMT

The City of Oceanside utilizes the Institute of Transportation Engineers (ITE) San Diego Regional Guidelines (May 2019) to establish thresholds and methodology for VMT analysis. For analysis purposes the most recent version of these guidelines shall be utilized. The following sections summarize the VMT thresholds requirements for Oceanside in alignment with ITE. Thorough analysis explanation can be found in the most recent ITE guidance.

Minimum Threshold for VMT Analysis

Based on the recommendations of the Institute of Transportation Engineers (ITE) for the San Diego section, **Table 3** indicates when a VMT analysis for CEQA is required. This is based on keeping consistent with the thresholds previously used and *SANDAG's Not So Brief Guide Trip Generation (2002)*. These thresholds are based on the understanding that SANDAG trip generation rates differ from ITE trip generation rates which OPR's recommendations are based on.

Projects Consistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that support these goals will adhere to the following VMT analysis thresholds identified in Table 3.

Table 3 – Threshold for VMT Analysis for Projects Consistent with the Adopted General Plan

	VMT Analysis Not Needed	VMT Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 1,000 ADT	Greater than 1,000 ADT

(1) If ADT is equal to 1,000 ADT, VMT analysis is required.

Projects Inconsistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that are not in support of the General Plan have a lower VMT threshold and will require a General Plan Amendment. The following VMT analysis thresholds for projects that are inconsistent are identified in **Table 4**.

Table 4 – Threshold for VMT Analysis for Projects Inconsistent with the Adopted General Plan

	VMT Analysis Not Needed	VMT Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 500 ADT	Greater than 500 ADT

(1) If ADT is equal to 500 ADT, VMT analysis is required.

The thresholds identified in Table 3 and Table 4 stem from the professional expertise and judgement of the ITE San Diego section. These thresholds reflect what is appropriate for the San Diego region to use for VMT and have previously helped determine LOS impacts.

VMT Thresholds

This section identifies what type of VMT analysis is required based on the land use and thresholds identified in the previous section. If a project qualifies for a VMT analysis, the VMT analysis can be compared based on City-wide, Regional, or community basis. The method of comparison shall be agreed upon by the City Traffic Engineer and shall be appropriate based on the use of the site.

The following defines the metrics identified in **Table 5**. It is important the appropriate metrics are applied for each project.

VMT/Capita:

Includes all vehicle-based person trips grouped and summed to the home location of individuals who are drivers or passengers on each trip. It includes home-based and non-home-based trips. The VMT for each home is then summed for all homes in a particular census tract and divided by the population of that census tract to arrive at Resident VMT/Capita.

VMT/Employee:

Includes all vehicle-based person trips grouped and summed to the work location of individuals on the trip. This includes all trips, not just work-related trips. The VMT for each work location is then summed for all work locations in a particular census tract and divided by the number of employees of that census tract to arrive at Employee VMT/Employee.

Small Projects

Small projects, under 2,400 ADT, shall utilize the most recent version of the SANDAG SB 743 Concept Maps. SANDAG has prepared an online mapping system that calculates average VMT/capita and VMT/employee at the census tract level. This tool determines the project's VMT/employee or VMT/capita to be compared to community, city, and/or regional averages. **Appendix C** provides an example of how to use the SANDAG Concept Maps to determine the project’s VMT.

Large Projects

Projects consisting of 2,400 ADT or higher will require the use of the most recent SANDAG model to determine VMT. The SANDAG transportation model provides a systematic analytical platform so that different alternatives and inputs can be evaluated in an iterative and controlled environment.

Table 5 identifies the significance thresholds for proposed land uses. Projects that exceed the significance thresholds are considered significant and will require VMT analysis and mitigation.

Table 5 – City of Oceanside Project Threshold

Project Type	Metric	Significance Threshold[1]
Residential	Resident VMT / Capita	15 % below regional average
Commercial	Employee VMT / Employee	15 % below regional average
Industrial	Employee VMT / Employee	15 % below regional average
Retail [2]	Net increase in the regional VMT	Net increase in regional VMT
Mixed-Use	Evaluate each land use separately	Based on proposed land use
Redevelopment [3]	Based on the proposed land use	Based on the proposed land use

(1) The City may request the applicant to analyze VMT using a more localized threshold if the project requires.

(2) Locally serving retail is presumed to decrease VMT however retail projects over 50,000 square feet are considered regionally serving.

(3) A redevelopment project that reduces VMT is presumed to have less than a significant impact and is screened out. The removal of affordable housing will require VMT analysis.

10.0 Mitigation Measures and Strategies for VMT Reduction

A project that exceeds the thresholds identified in the previous tables is considered to have a significant impact and will require mitigation measures and strategies. With appropriate mitigation the project may be able to apply VMT reductions to part or all of the project depending on the land use and strategy chosen. It is critical to implement strategies that are appropriate for the land use, for example, a residential project would not implement a telecommute strategy but may include providing a bike facility and amenities on-site.

SANDAG Mobility Management Guidebook

The purpose of the mitigation measures and strategies is to reduce the VMT generated by the project through a reduction of the distance driven or reducing the number of vehicle trips. It is recommended the SANDAG Mobility Management Guidebook (2019) be consulted to determine mitigation measures for the project site.

The guidebook consists of the following resources:

- Mobility Management Guidebook
- VMT Reduction Calculator Tool
- Calculator Design Document
- Recommendations for Application
- User Training Videos

Figure 10-1 identifies the potential mobility management strategies included in the guidebook that are recommended for a project exceeding the VMT thresholds. It is also recommended the SANDAG iCommute and MTS programs be utilized for projects generating employment. Several opportunities included in these programs are identified in **Table 6**. **Appendix D** contains the SANDAG Mobility Management Guidebook for reference.

Table 6 – Additional VMT Reduction Strategies for Employers

Additional VMT Reduction Strategies for Employers
Establish and maintain participation in SANDAG’s iCommute services for employers
Provide a monthly employer subsidy/pretax payroll deduction toward transit passes, carpool, or vanpool.
Encourage employees to register in SANDAG’s iCommute program for rideshare matches.
Provide a monthly employer subsidy or incentives for employees or patrons who regularly commute by bicycle.
Host or sponsor regional events such as Bike to Work day, Rideshare Month
Participate in MTS promotions such as Free Ride Day and EcoPass
Implement an internal carpool program for employees
Designate an on-site point of contact for employee commute inquiries.

OPR Mitigation Measures

Table 7 identifies additional mitigation measures provided by the Office of Planning and Research (OPR).

Table 7 – OPR Recommended Mitigation Measures

Additional Mitigation Measures
Improve or increase access to transit.
Increase access to common goods and services, such as groceries, schools, and daycare.
Incorporate affordable housing into the project.
Incorporate a neighborhood electric vehicle network.
Orient the project toward transit, bicycle, and pedestrian facilities.
Improve pedestrian or bicycle networks, or transit service.
Implement or provide access to a commute reduction program.
Provide parking cash-out programs.
Unbundle parking costs.
Provide bicycle parking.
Limit or eliminate parking supply.
Provide traffic calming as a way to incentivize bicycling and/or walking.
Provide partially or fully subsidized transit passes.
Shift single occupancy vehicle trips to carpooling or vanpooling by providing ride-matching services or shuttle services.
Provide telework options.
Provide incentives or subsidies that increase the use of modes other than a single-occupancy vehicle.
Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, showers and locker rooms, and bicycle repair services.
Provide employee transportation coordinators at employment sites.
Provide a guaranteed ride home service to users of non-auto modes.
Contribute to a mobility fee program that funds multimodal transportation improvements, such as those described above.

The City may decide to implement a VMT mitigation fee bank to fund projects that would help the City reduce GHG emissions and promote VMT reduction. This would need to be developed specifically for VMT reduction projects for the City and cannot be preexisting to this document. Mitigation measures are not limited to this document and may be discussed with the City Traffic Engineer providing appropriate reduction methodologies are applied using documentation published by SANDAG, the California Air Resources Board (CARB), or the California Air Pollution Control Officers Association (CAPCOA). These resources provide quantifiable measures that may be used for project mitigation. Mitigation and reduction measures utilized should be documented and easily referenced in the document’s appendix.

Significant and Unavoidable Impacts

Projects that are unable to mitigate to a less than significant level of impact must provide a detailed statement of overriding considerations in accordance with CEQA Guidelines Sections 15091 and 15093. The following are direct quotes from the legislation to help project applicants understand CEQA law.

Section 15091 Findings:

" (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding.

The possible findings are:

(1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

(3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

(b) The findings required by subdivision (a) shall be supported by substantial evidence in the record.

(c) The finding in subdivision (a)(2) shall not be made if the agency making the finding has concurrent jurisdiction with another agency to deal with identified feasible mitigation measures or alternatives. The finding in subdivision (a)(3) shall describe the specific reasons for rejecting identified mitigation measures and project alternatives.

(d) When making the findings required in subdivision (a)(1), the agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to avoid or substantially lessen significant environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures.

(e) The public agency shall specify the location and custodian of the documents or other material which constitute the record of the proceedings upon which its decision is based.

(f) A statement made pursuant to Section 15093 does not substitute for the findings required by this section."

Section 15093 – Statement of Overriding Considerations:

" (a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposal project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

(b) When the lead agency approves a project which will result in the occurrence of significant effects which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.

(c) If an agency makes a statement of overriding considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination. This statement does not substitute for, and shall be in addition to, findings required pursuant to Section 15091."

11.0 LOCAL TRANSPORTATION STUDY AND LOCAL TRANSPORTATION ASSESSMENT GUIDELINES

The City of Oceanside utilizes the Institute of Transportation Engineers (ITE) San Diego Regional Guidelines (May 2019) to establish thresholds and methodology for a Local Transportation Study (LTS). A Local Transportation Study is different from VMT analysis for CEQA purposes and may be required in addition to the VMT analysis or individually. A Local Transportation Study will analyze the projects influence on the surrounding intersections and roadway network utilizing level of service (LOS) for all project scenarios. The purpose of the LTS is to help quantify the local impact of the development and expected changes in transportation conditions. The LTS should include roadway, bicycle, pedestrian, and transit evaluations. The following sections identify the project requirements for a Local Transportation Study. The Local Transportation Study helps the City ensure the goals, objectives, and policies adopted by the City are supported and implemented while monitoring the capacity for the roadway networks.

Data should be collected during typical operation hours. Data should be recent and no more than 2 years old for an LTS. **The acceptable level of service for the City of Oceanside that is consistent with the adopted Circulation Element is LOS D.**

Minimum Threshold for Local Transportation Study

Based on the recommendations of the Institute of Transportation Engineers (ITE) for the San Diego section, **Table 8** indicates when a Local Transportation Study is required for the City. This is based on keeping consistent with the thresholds previously used and *SANDAG's Not So Brief Guide (2002) Trip Generation*.

Projects Consistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that support these goals will adhere to the following LTS thresholds identified in Table 8.

Table 8 – Threshold for LTS for Projects Consistent with the Adopted General Plan

	LTS Analysis Not Needed	LTS Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 1,000 ADT	Greater than 1,000 ADT

(1) If ADT is equal to 1,000 ADT, an LTS is required.

A Local Transportation Study (LTS) will be required if a project exceeds 1,000 ADT and is consistent with the adopted General Plan.

Projects Inconsistent with the Adopted General Plan

The City's adopted General Plan represents the vision and goals the City has for the community. Projects that are not in support of the General Plan have a lower LTS threshold and will require a General Plan Amendment. The following LTS analysis thresholds for projects that are inconsistent are identified in **Table 9**.

Table 9 – Threshold for LTS for Projects Inconsistent with the Adopted General Plan

	LTS Analysis Not Needed	LTS Analysis Needed (1)
Average Daily Traffic Volume (ADT)	Less than 500 ADT	Greater than 500 ADT

(1) If ADT is equal to 500 ADT, an LTS is required.

A Local Transportation Study (LTS) will be required if a project exceeds 500 ADT and is inconsistent with the adopted General Plan.

The thresholds identified in Table 7 and Table 8 stem from the professional expertise and judgement of the ITE San Diego section. These thresholds keep consistent with regional practice and will help ensure developments will not overburden the transportation network.

If a project would add peak hour trips to any existing on- or off-ramp it is recommended to consult with the City and Caltrans to determine if an LTS would be required.

Study Scenarios

The following scenarios are included in an LTS and may be modified in agreement with the City Traffic Engineer.

- Existing Conditions
- Existing Conditions Plus Project
- Existing Conditions Plus Near-Term Cumulative Projects
- Existing Conditions Plus Near-Term Cumulative Projects Plus Project
- Buildout Conditions (2030)
- Buildout Conditions Plus Project

Local Transportation Assessment (LTA)

A Local Transportation Assessment (LTA) may be required instead of a Local Transportation Study depending on the size of the project. A helps the City monitor development impacts on the transportation network and is similar to a Local Transportation Study(LTS). The main difference between the two studies is a Local Transportation Assessment (LTA) analyzes fewer scenarios than a Local Transportation Study (LTS). A Local Transportation Assessment (LTA) will be required if a project is less than 1,000 ADT but is anticipated to influence the surrounding environment.

A Local Transportation Assessment (LTA) will be required to analyze the following scenarios based on the thresholds for identified for the project's ADT.

- **A project that generates between 200-500 ADT will be required to analyze existing conditions and existing conditions plus project.**

- **A project that generates between 500-1,000 ADT will be required to analyze existing conditions, existing conditions plus project, existing conditions plus near-term cumulative projects, and existing conditions plus near-term cumulative projects plus project.**

Transportation Modes to be Included for Discussion in the LTS/LTA

Pedestrian:

- The LTS/LTA shall include pedestrian infrastructure available including any opportunities or deficiencies such as path obstructions or missing sidewalk for ½ mile walking distance from project pedestrian access points.
- All pedestrian facilities directly connected to project access points or adjacent to the project development, extending in each direction to the nearest intersection with a classified roadway or connection with a Class I path
- Facilities connecting to transit stops within two blocks of the project
- Only facilities on the side of the project or along the walking route to transit stop
- Additional geographic areas may be included in certain cases to address special cases such as schools or retail centers

Bicycle:

- The LTS/LTA shall include a discussion of bicycle infrastructure available including any opportunities or deficiencies such as bike lanes, bike buffers, or bike boxes. This section must also include discussion of what is planned based on City and regional documentation. The extents are as follows:
    - All roadways adjacent to the project, extending in each direction to the nearest intersection with a classified roadway or with a Class I path
    - Both directions of travel should be evaluated

Transit:

- The LTS/LTA shall identify any transit stops or routes existing and planned near the project site. This section shall also include a discussion and evaluation of transit stop amenities within ½ mile of each pedestrian access point.

Vehicle:

All signalized intersections and signalized project driveways shall be analyzed if:

- The project will add 50 or more peak hour (final cumulative) trips in either direction

All unsignalized intersections and unsignalized project driveways shall be analyzed if:

- The project will add 50 or more peak hour (final cumulative) trips in either direction

All freeway ramp intersections and signalized project driveways shall be analyzed if:

- The project will add 20 or more peak hour (final cumulative) trips in either direction

Intersection Level of Service analysis should be conducted using the Highway Capacity Manual (HCM) Methodology. For signalized intersections, the methodology described in the HCM for signalized intersections is used. With this methodology, the average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. The relationship between control delay per vehicle and LOS for signalized intersections is summarized in **Table 10**.

Table 10 – HCM Level of Service Description for Signalized Intersections

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	Insignificant delays: no approach phase is fully utilized and no vehicle waits longer than one red indication	$\leq$ 10
B	Minimal delays: an occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 – 20
C	Acceptable delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 25 – 35
D	Tolerable delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 – 55
E	Significant delays: Volumes approaching capacity. Vehicles may wait through several cycles and long vehicle queues form upstream.	> 55 – 80
F	Excessive delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

Source: Highway Capacity Manual, Transportation Research Board, 2010.

For unsignalized intersections, the methodology described in the HCM for unsignalized intersections is used. With this methodology, LOS is related to the control delay for each stop-controlled movement. The relationship between control delay per vehicle and LOS for unsignalized intersections is summarized in **Table 11**.

Table 11 – HCM Level of Service Description for Unsignalized Intersections

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	No delay for stop-controlled approaches.	$\leq$ 10
B	Operations with minor delay.	> 10 – 15
C	Operations with moderate delays.	> 15 – 25
D	Operations with some delays.	> 25 – 35
E	Operations with high delays and long queues.	> 35 – 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: Highway Capacity Manual, Transportation Research Board, 2010.

Table 12 provides guidance on the levels of ADT that can be accommodated on various types of roadways, based on level of service.

Table 12 – Circulation Element Roadway Classification LOS & Capacity

Class	Lanes	Cross Section (1)	Level of Service (LOS)				
			A	B	C	D	E
Expressway	6	102/160 122/200	30,000	42,000	60,000	70,000	80,000
Expressway	4	102/160 122/200	25,000	35,000	50,000	55,000	60,000
Prime Arterial	6	104/124	25,000	35,000	50,000	55,000	60,000
6-Lane Major Arterial	6	104/124	20,000	28,000	40,000	45,000	50,000
5-Lane Major Arterial (2)	5	102/122	17,500	24,500	35,000	40,000	45,000
4-Lane Major Arterial	4	80/100	15,000	21,000	30,000	35,000	40,000
Secondary Collector (4 lanes with 2-way left turn lane)	4	64/84	10,000	14,000	20,000	25,000	30,000
Secondary Collector (4 lanes without 2-way left-turn lane, with left turn pockets	4	54/74, 60/80	9,000	13,000	18,000	22,000	25,000
Collector (commercial fronting, 2-lanes with 2-way left turn lane) (3)	2	50/70	5,000	7,000	10,000	13,000	15,000
Collector (residential streets in the Circulation Element or industrial fronting)	2	40/60, 50/70	4,000	5,500	7,500	9,000	10,000
Local Street (residential streets NOT in the Circulation Element	1	36/56, 40/60	–	–	2,400	–	–

(1) Cross sections are listed as curd-to-curb width/total right of way width, in feet.
(2) Vandegrift Boulevard is the only Circulation Element roadway designated as a 5-lane Major Arterial. It is not intended that other roadways be build to 5-lane Major Arterial standards.
(3) This capacity will also be assumed for a two-lane one-way collector.

Table 13 indicates when a project's effect on the roadway system is considered to justify the need for roadway improvements. That is, if a project's traffic effect causes the values in this table to be exceeded, roadway improvements should be considered as follows on a case by case basis:

- Improvements should be consistent with the General Plan
- Improvements for transit, bike and pedestrian facilities should be given priority in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG.
- Projects in Transit Priority Areas or Smart Growth Opportunity Areas as identified by SANDAG, that are consistent with the General Plan at the time of project application, should not be denied due to the inability to provide roadway improvements (i.e. existing right of way is constrained, etc.)

Table 13 – Determination of the Need for Roadway Improvements

Level of Service with Project*	Allowable Change Due to Project Effect**					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (MPH)	V/C	Speed (MPH)	Delay (Sec.)	Delay (Min.)
E & F (or ramp meter delays above 15 min)	0.01	1	0.02	1	2	2

12.0 TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

In general, the goal of City Staff is to help Oceanside increase connectivity and level of comfort for pedestrians, bicyclists, and transit users. Project improvements may come from the City's adopted General Plan or other City policies that help improve the overall quality of life for the community. **Table 14** identifies some TDM improvement measures that may be considered for a project.

Table 14 – Potential TDM Improvement Measures

Potential TDM Measures	
Transit Facilities	Telecommuting
Bike Facilities	Rideshare Programs
Walkability	Flex-time
Carpool Incentives	Parking Cash-Out
Subsidized Transit Passes	Shuttle Service

A measure that is not listed may be considered if the mitigation is appropriately applied and reasonable. Additional improvement measures may be identified as future technologies and policies evolve or with consultation by City Staff.

13.0 RESOURCES

The following resources were used in the development of these guidelines. It is recommended the consultant develop a plan of action that aligns with the City Traffic Engineer's expectation prior to conducting any analyses.

City of San Diego. "Transportation Study Manual (TSM) Draft." September 2019.

Institute of Transportation Engineers (San Diego Section). " Guidelines for Transportation Impact Studies (TIS) in the San Diego Region." May 2019. Accessed April 1, 2020.

Governor's Office of Planning and Research (OPR). "Technical Advisory on Evaluating Transportation Impacts in CEQA." December 2018. Accessed April 1, 2020.

Governor's Office of Planning and Research (OPR). "Key Resources on SB 743: Studies, Reports, Briefs, and Tools." April 2018. Accessed April 1, 2020.

California Air Resources Board (CARB). "2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals." January 2019. Accessed April 1, 2020.

California Air Pollution Control Officers Association (CAPCOA). "Quantifying Greenhouse Gas Mitigation Measures." August 2010. Accessed April 1, 2020.

San Diego Association of Governments (SANDAG). "TDM Planning Resources." 2019. Accessed April 1, 2020.

Appendix C

City of Oceanside Project Information Form

PROJECT INFORMATION FORM (PIF)

THE FOLLOWING IS TO BE COMPLETED BY THE PROJECT APPLICANT:

PROJECT INFORMATION FORM			
1.	**PROJECT DESCRIPTION:** Tierra Norte Subdivision (Planned Block Development with up to 400 homes)		
2.	**PROJECT LOCATION:** 4665 N. River Rd		
3.	**LAND USE:** Residential **SIZE/DENSITY:** Approximately 25.6 Acres		
4.	**ZONING AND LAND USE CONSISTENT WITH ADOPTED GENERAL PLAN?**	☐ Yes	☑ No
5.	**PROJECT LOCATED IN TRANSIT PRIORITY AREA[1], SMART GROWTH AREA[2], OR LOW VMT AREA[3]?**	☐ Yes	☑ No
6.	**PROJECT TRIP GENERATION:** 3,200 **ADT**	☐ < 200 ADT ☐ ≥ 200 ADT ☐ ≥ 1,000 ADT ☑ ≥ 2,400 ADT	
	ATTACHMENTS		
A.	**PROJECT LOCATION MAP**	☑ Attached	
B.	**PROJECT TRIP DISTRIBUTION**	☑ Attached	
C.	**PROJECT TRIP ASSIGNMENT**	☑ Attached	

1) Projects located in a TPA must be able to access the transit station within a ½ mile walking distance or 6 minute walk continuously without discontinuity of sidewalk or obstructions to the route. Qualifying transit stops means a site containing an existing rail transit station served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (OPR, 2017). A high-quality transit corridor may also be considered if a corridor with fixed route bus service has service intervals no longer than 15 minutes during peak commute hours (OPR, 2017).
(2) See Appendix B.
(3) Based on the most recent SANDAG SB 743 Screening Map. Example shown in Appendix C.

TO BE COMPLETED BY CITY STAFF AND RETURNED TO PROJECT APPLICANT

	PROJECT STUDY REQUIREMENTS			
1)	**Does the project require a CEQA VMT analysis?**	☑ Yes	☐ No	☐ Incomplete(1)
	A. If yes, does the project require a SANDAG Model Run?	☑ Yes	☐ No	
2a)	**Does the project require a Local Transportation Study?**	☑ Yes	☐ No	☐ Incomplete(1)
	OR			
2b)	**Does the project require a Local Transportation Assessment?**	☐ Yes	☑ No	☐ Incomplete(1)

(1) Incomplete application or additional information is needed to determine study requirements.

Sergio Madera
Digitally signed by Sergio Madera
DN: cn=Sergio Madera, ou=Planning, email=SMadera@oceansideca.org
Date: 2021.11.03 13:45:27 -07'00'

Planning Division   Date

Tam Tran
Digitally signed by Tam Tran
DN: cn=Tam Tran, ou=Engineering, email=TTran@oceansideca.org
Date: 2021.11.03 13:04:06 -07'00'

Transportation Engineering Section   Date

3.4 Project Traffic Generation

The project is a Plan Block Development Plan that will require a General Plan Amendment and rezone from light industrial uses to residential on two parcels for a total of 25.6 acres (Kawano parcel 9.7 acres and Nagata parcel 15.9 acres). A maximum of 400 dwelling units is proposed for a density of 15.6 units per acre (400 units / 25.6 acres).

The site has historically been used for agricultural, packing, and shipping uses. A trip credit was not applied because the previous uses were not in operation when off-site traffic data was collected.

The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Based on the project acreage of 25.6 acres and proposed 400 dwelling units, the density is 15.6 units per acre. The SANDAG trip rate is 8 daily trips per dwelling unit for densities between 6 and 20 units per acre.

Using SANDAG traffic generation rates, the project is calculated to generate 3,200 daily trips, 256 AM peak hour trips (51 inbound and 205 outbound), and 320 PM peak hour trips (224 inbound and 96 outbound) as shown in **Table 8**.

TABLE 8: PROJECT TRAFFIC GENERATION

Proposed								AM						PM	
Land Use	Rate	Size & Units		ADT	%	Split		IN	OUT	%	Split		IN	OUT
Residential (density 6-20 du/ac)	8 /DU	400	DU	3,200	8%	0.2	0.8	51	205	10%	0.7	0.3	224	96

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002.
ADT-Average Daily Traffic; Split-percent inbound and outbound.

The final product may have a mix of single family and multi-family units; therefore, the trip generation levels (ADT, AM & PM) as analyzed within this report will define the upper limit of traffic that can be generated by the final project type and unit count.

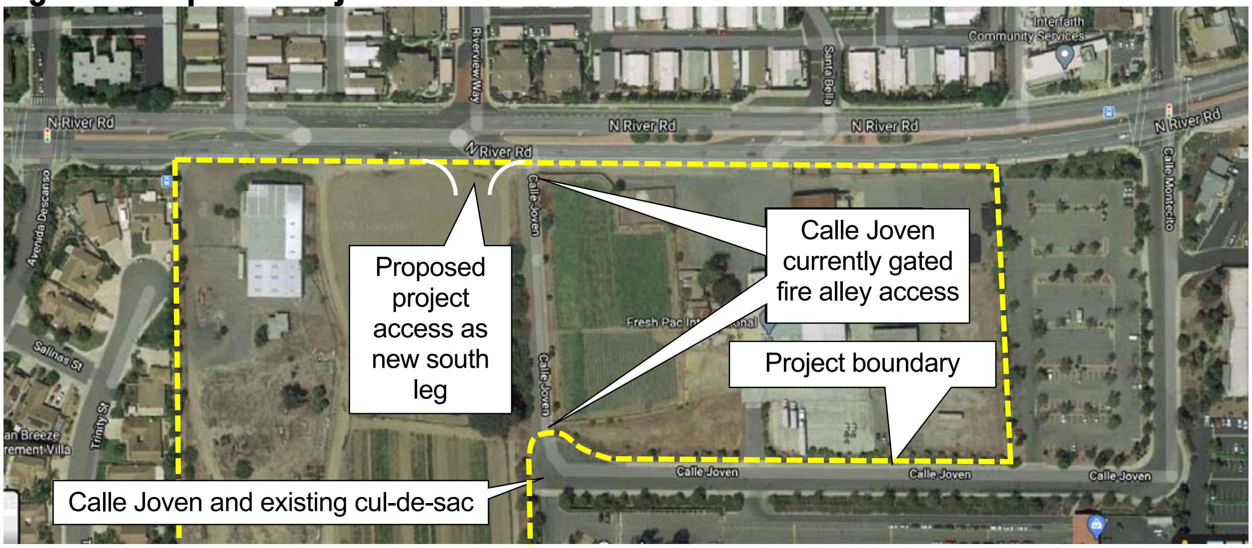
The proposed rezone will replace the existing industrial use with a proposed residential use. The existing industrial zoning could generate a range of traffic based on the type of industrial use. SANDAG trip rates document a range of 200 ADT/acre for an Industrial/Business Park (commercial included) to 90 ADT/acre for an Industrial/Business Park (no commercial). For the project site of 25.6 acres, the industrial trips could range from 5,120 ADT (Industrial/Business Park with commercial) to 2,304 ADT (Industrial/Business Park without commercial). The existing land use has the potential to generate more traffic than the proposed residential lane use. However, this is a ground to plan analysis; therefore, a trip credit was not applied for the potential industrial land uses.

3.5 Project Access

Primary project access is proposed by constructing a south leg at the intersection of N. River Road/ Riverview Way. The project applicant proposed to signalize this intersection based on Signal Warrant Condition B "Interruption of Continuous Traffic", which is satisfied with the addition of project traffic. Signal warrant calculations for the project driveway and lane configurations are described within Section 4.16.1 of this report.

A portion of the southern project boundary borders Calle Joven. A secondary access is anticipated to connect with Calle Joven; however, a site design is not completed, thus the internal circulation and connection with Calle Joven has yet to be determined. There is currently a gated fire access alley labeled Calle Joven immediately east of Riverview Way that will be addressed in the final site design. The proposed project access, Calle Joven, and the gated fire access alley are shown in **Figure 8**.

Figure 8: Proposed Project Access



Source: Google Maps

3.6 Project Distribution and Assignment

Project trips were distributed to the adjacent roadway network based on a San Diego Association of Governments (SANDAG) Series 12 Select Zone Assignment (SZA) that was reviewed and adjusted by City staff. A copy of the SZA is included in **Appendix G**. The project distribution shown in **Figure 9**. The project assignment is shown in **Figure 10.**

Figure 9: Project Distribution

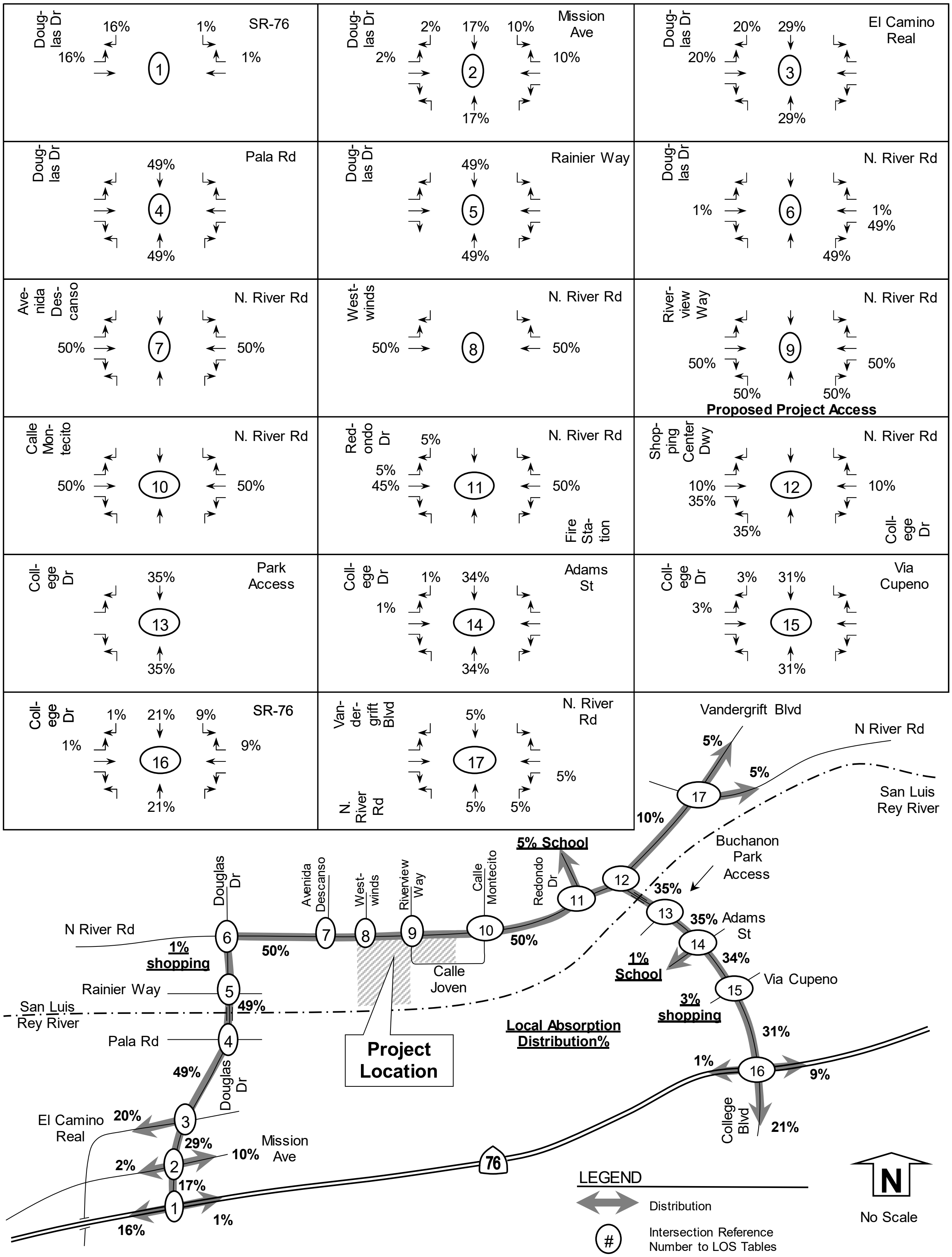
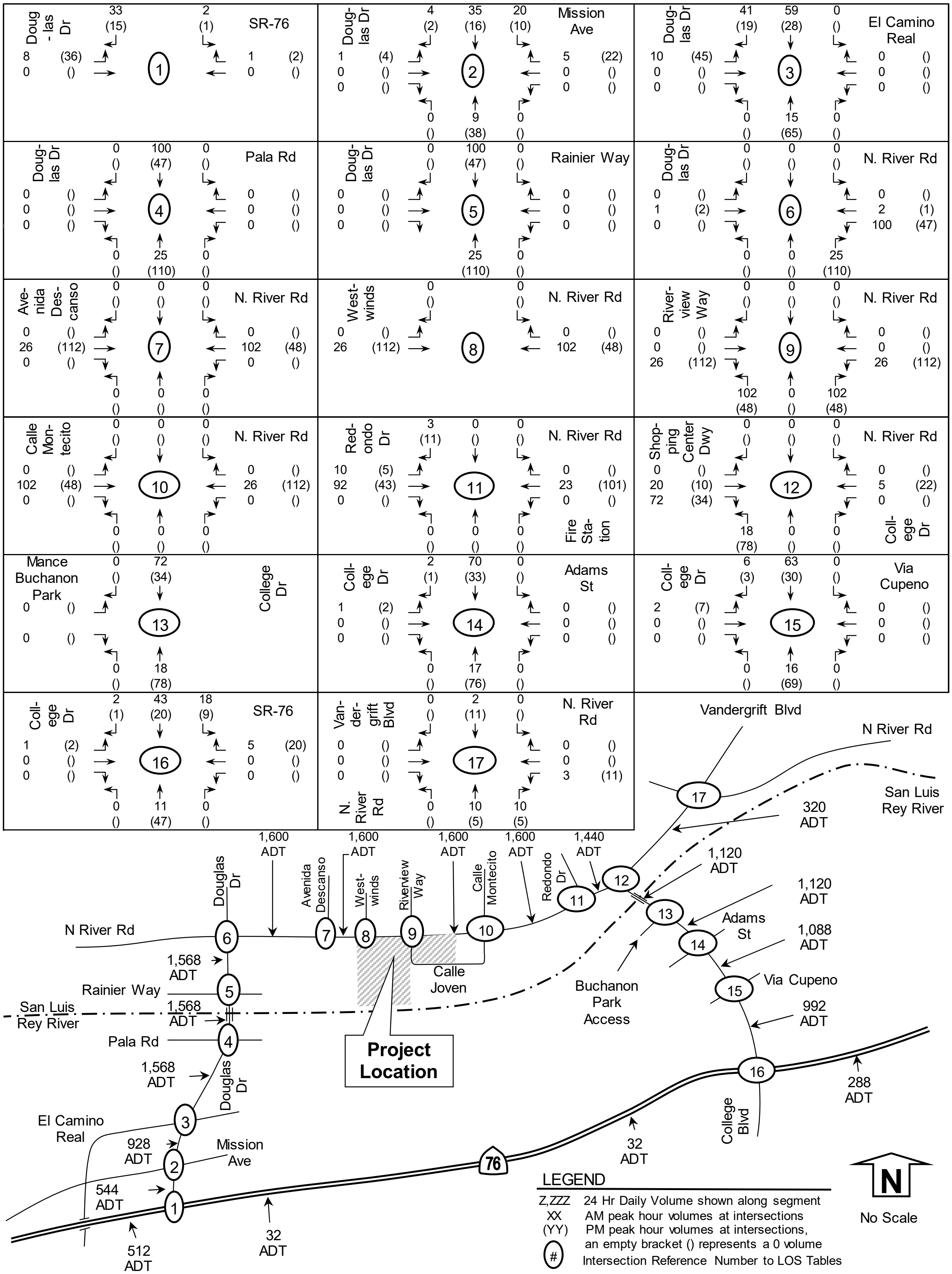


Figure 10: Project Volumes

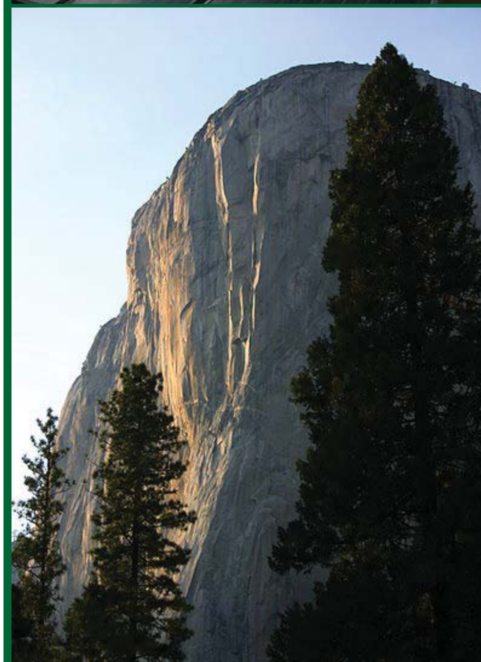


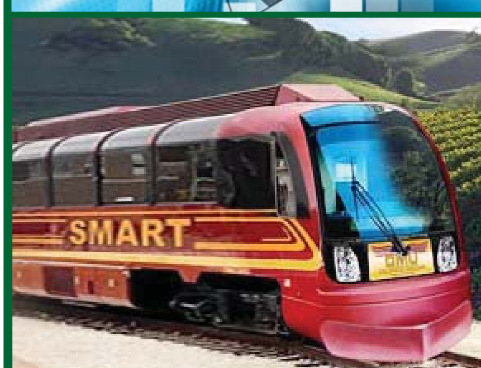
Appendix D

Excerpts from CAPCOA

CAPCOA

CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION





Quantifying
Greenhouse Gas Mitigation Measures

A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures

August, 2010

3.0 Transportation

3.1 Land Use/Location

3.1.1 Increase Density

Range of Effectiveness: 0.8 – 30.0% vehicle miles traveled (VMT) reduction and therefore a 0.8 – 30.0% reduction in GHG emissions.

Measure Description:

Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.

The reductions in GHG emissions are quantified based on reductions to VMT. The relationship between density and VMT is described by its elasticity. According to a recent study published by Brownstone, et al. in 2009, the elasticity between density and VMT is 0.12. Default densities are based on the typical suburban densities in North America which reflects the characteristics of the ITE Trip Generation Manual data used in the baseline estimates.

Measure Applicability:

- Urban and suburban context
  - Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of housing units per acre or jobs per job acre

Mitigation Method:

% VMT Reduction = A * B [not to exceed 30%]

Where:

A = Percentage increase in housing units per acre or jobs per job acre[33] = (number of housing units per acre or jobs per job acre – number of housing units per acre or jobs per job acre for typical ITE development) / (number of housing units per acre or jobs per job acre for typical ITE development) For small and medium sites (less than ½ mile in radius) the calculation of housing and jobs per acre should be performed for the development site as a whole, so that the analysis does not erroneously attribute trip reduction benefits to measures that simply shift jobs and housing within the site with no overall increase in site density. For larger sites, the analysis should address the development as several ½-mile-radius sites, so that shifts from one area to another would increase the density of the receiving area but reduce the density of the donating area, resulting in trip generation rate decreases and increases, respectively, which cancel one another.

B = Elasticity of VMT with respect to density (from literature)

Detail:

- A: [not to exceed 500% increase]
  - If housing: (Number of housing units per acre – 7.6) / 7.6
    (See Appendix C for detail)
  - If jobs: (Number of jobs per acre – 20) / 20
    (See Appendix C for detail)
- B: 0.07 (Boarnet and Handy 2010)

Assumptions:

Data based upon the following references:

- Boarnet, Marlon and Handy, Susan. 2010. "DRAFT Policy Brief on the Impacts of Residential Density Based on a Review of the Empirical Literature." http://arb.ca.gov/cc/sb375/policies/policies.htm; Table 1.

[33] This value should be checked first to see if it exceeds 500% in which case A = 500%.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[34]
CO_2e	1.5-30% of running
PM	1.5-30% of running
CO	1.5-30% of running
NOx	1.5-30% of running
SO_2	1.5-30% of running
ROG	0.9-18% of total

Discussion:

The VMT reductions for this strategy are based on changes in density versus the typical suburban residential and employment densities in North America (referred to as "ITE densities"). These densities are used as a baseline to mirror those densities reflected in the ITE Trip Generation Manual, which is the baseline method for determining VMT.

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of housing units or jobs per acre (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing residential density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as density). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for housing:

Low Range % VMT Reduction (8.5 housing units per acre)

$$= (8.5 - 7.6) / 7.6 * 0.07 = 0.8\%$$

High Range % VMT Reduction (60 housing units per acre)

$$= \frac{60 - 7.6}{7.6} = 6.9 \text{ or } 690\% \quad \text{Since greater than 500\%, set to 500\%}$$

$$= 500\% \times 0.07 = 0.35 \text{ or } 35\% \quad \text{Since greater than 30\%, set to 30\%}$$

[34] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Sample calculations are provided below for jobs:

Low Range % VMT Reduction (25 jobs per acre)
= (25 – 20) / 20 *0.12 = 3%

High Range % VMT Reduction (100 jobs per acre)

$$= \frac{100-20}{20} = 4 \text{ or } 400\%$$

=400% x 0.12 = 0.48 or 48% Since greater than 30%, set to 30%

Preferred Literature:

- -0.07 = elasticity of VMT with respect to density

Boarnet and Handy's detailed review of existing literature highlighted three individual studies that used the best available methods for analyzing data for individual households. These studies provided the following elasticities: -0.12 - Brownstone (2009), -0.07 – Bento (2005), and -0.08 – Fang (2008). To maintain a conservative estimate of the impacts of this strategy, the lower elasticity of -0.07 is used in the calculations.

Alternative Literature:

- -0.05 to -0.25 = elasticity of VMT with respect to density

The *TRB Special Report 298* literature suggests that doubling neighborhood density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.

Alternative Literature References:

TRB, 2009. *Driving and the Built Environment*, Transportation Research Board Special Report 298. http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf . Accessed March 2010. (p. 4)

Other Literature Reviewed:

None

3.2 Neighborhood/Site Enhancements

3.2.1 Provide Pedestrian Network Improvements

Range of Effectiveness: 0 - 2% vehicle miles traveled (VMT) reduction and therefore 0 - 2% reduction in GHG emissions.

Measure Description:

Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations.

Mitigation Method:

Estimated VMT Reduction	Extent of Pedestrian Accommodations	Context
2%	Within Project Site and Connecting Off-Site	Urban/Suburban
1%	Within Project Site	Urban/Suburban
< 1%	Within Project Site and Connecting Off-Site	Rural

Assumptions:

Data based upon the following references:

- Center for Clean Air Policy (CCAP) Transportation Emission Guidebook. http://www.ccap.org/safe/guidebook/guide_complete.html (accessed March 2010)
- 1000 Friends of Oregon (1997) "Making the Connections: A Summary of the LUTRAQ Project" (p. 16): http://www.onethousandfriendsoforegon.org/resources/lut_vol7.html

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[45]
CO_2e	0 - 2% of running
PM	0 - 2% of running
CO	0 - 2% of running
NOx	0 - 2% of running
SO_2	0 - 2% of running
ROG	0 – 1.2% of total

Discussion:

As detailed in the preferred literature section below, the lower range of 1 – 2% VMT reduction was pulled from the literature to provide a conservative estimate of reduction potential. The literature does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context.

Example:

N/A – calculations are not needed.

Preferred Literature:

[45] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- 1 - 2% reduction in VMT

The Center for Clean Air Policy (CCAP) attributes a 1% reduction in VMT from pedestrian-oriented design assuming this creates a 5% decrease in automobile mode share (e.g. auto split shifts from 95% to 90%). This mode split is based on the Portland Regional Land Use Transportation and Air Quality (LUTRAQ) project. The LUTRAQ analysis also provides the high end of 10% reduction in VMT. This 10% assumes the following features:

– Compact, mixed-use communities
– Interconnected street network
– Narrower roadways and shorter block lengths
– Sidewalks
– Accessibility to transit and transit shelters
– Traffic calming measures and street trees
– Parks and public spaces

Other strategies (development density, diversity, design, transit accessibility, traffic calming) are intended to account for the effects of many of the measures in the above list. Therefore, the assumed effectiveness of the Pedestrian Network measure should utilize the lower end of the 1 - 10% reduction range. If the pedestrian improvements are being combined with a significant number of the companion strategies, trip reductions for those strategies should be applied as well, based on the values given specifically for those strategies in other sections of this report. Based upon these findings, and drawing upon recommendations presented in the alternate literature below, the recommended VMT reduction attributable to pedestrian network improvements, above and beyond the benefits of other measures in the above bullet list, should be 1% for comprehensive pedestrian accommodations within the development plan or project itself, or 2% for comprehensive internal accommodations and external accommodations connecting to off-site destinations.

Alternative Literature:

Alternate:

- Walking is three times more common with enhanced pedestrian infrastructure
- 58% increase in non-auto mode share for work trips

The Nelson\Nygaard [1] report for the City of Santa Monica Land Use and Circulation Element EIR summarized studies looking at pedestrian environments. These studies have found a direct connection between non-auto forms of travel and a high quality pedestrian environment. Walking is three times more common with communities that have pedestrian friendly streets compared to less pedestrian friendly communities. Non-auto mode share for work trips is 49% in a pedestrian friendly community, compared to 31% in an auto-oriented community. Non-auto mode share for non-work trips is 15%, compared to 4% in an auto-oriented community. However, these effects also depend upon other aspects of the pedestrian friendliness being present, which are accounted for separately in this report through land use strategy mitigation measures such as density and urban design.

Alternate:

- 0.5% - 2.0% reduction in VMT

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions [2] attributes 1% reduction for a project connecting to *existing* external streets and pedestrian facilities. A 0.5% reduction is attributed to connecting to *planned* external streets and pedestrian facilities (which must be included in a pedestrian master plan or equivalent). Minimizing pedestrian barriers attribute an additional 1% reduction in VMT. These recommendations are generally in line with the recommended discounts derived from the preferred literature above.

Preferred and Alternative Literature Notes:

[1] Nelson\Nygaard, 2010. City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis (p.401). http://www.shapethefuture2025.net/

Nelson\Nygaard looked at the following studies: Anne Vernez Moudon, Paul Hess, Mary Catherine Snyder and Kiril Stanilov (2003), Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, http://www.wsdot.wa.gov/research/reports/fullreports/432.1.pdf; Robert Cervero and Carolyn Radisch (1995), Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, http://www.uctc.net/papers/281.pdf;

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 11) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Other Literature Reviewed:

None

APPENDIX R
SEWER SERVICE OVERVIEW

DEXTER WILSON ENGINEERING, INC.

DEXTER S. WILSON, P.E.
ANDREW M. OVEN, P.E.
STEPHEN M. NIELSEN, P.E.
NATALIE J. FRASCHETTI, P.E.
STEVEN J. HENDERSON, P.E.

MEMORANDUM **952-002**

TO: **Dan Niebaum, A.I.C.P., Lightfoot Planning Group**

FROM: **Andrew M. Oven, P.E., Dexter Wilson Engineering, Inc.** AO

DATE: **October 6, 2020**

SUBJECT: **North River Road Planned Block Development Overlay District – Sewer Service Overview**

Introduction

The proposed North River Road Planned Block Development Overlay District includes two separate parcels located at 4665 North River Road (Parcel A, APN 157-060-40) and 4617 North River Road (Parcel B, APN 157-060-17). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of the City of Oceanside. Parcel A consists of a total land area of 9.7 acres; however, approximately 1.8 acres are composed of existing roadway and emergency access rights-of-way. Thus, Parcel A contains 7.9 gross developable acres of land which reduces the total developable acreage for both parcels to 23.8 acres.

The purpose of this technical memorandum is to address sewer service to the proposed project. This memorandum will outline the existing sewer facilities in the vicinity of the proposed project and qualitatively comment on the ability of the existing facilities to provide adequate sewer service.

Land Use

The Planned Block Development Overlay District property is currently designated as Light Industrial (LI) by the City of Oceanside General Plan, and as Limited Industrial (IL) under the City's Comprehensive Zoning Ordinance. The project proponent is planning to make application to amend the current land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

The North River Road PBD property is including in its re-zoning proposal a maximum cap of 400 dwelling units for the combined two parcels. This results in dwelling unit density of 16.8 units/acre.

Sewage Generation

As stated above, the existing land use for the project site is Light Industrial. Sewage generation based on this land use is calculated using the sewer generation factor for Industrial Land Use from Table 3.3 Recommended Flow Factors for Future Flow Estimation, Sewer Master Plan, City of Oceanside, October 2015 – Final.

Here is the calculation for sewage generation for the proposed project site based on existing land use.

23.8 acres x 1,000 gpd/ac = 23,800 gpd average

The proposed land use for the project site is Medium-Density Residential. From the Sewer Master Plan cited above, the sewage flow factor for Medium-/High-Density Residential is 140 gpd/EDU. Assuming each dwelling unit within the proposed project is one equivalent dwelling unit (EDU), the sewer flow expected from the proposed project is calculated below.

400 Dwelling Units x 140 gpd/EDU = 56,000 gpd average

Based on the change in land use, the proposed project is estimated to increase the sewer generation for this site by 32,200 gpd average.

From the October 2015 Sewer Master Plan, Table 3.9, the Peak Wet Weather Flow peaking factor is 2.58 for Near-Term analysis. Thus, the additional sewage flow for the proposed project equates to 83,076 gpd peak or 57.7 gpm peak.

Existing Sewer System

Exhibit A presents the existing sewer system in the vicinity of the proposed project. The proposed project fronts North River Road between Avenida Descanso and Calle Montecito. In North River Road fronting the property there is an existing 27-inch gravity sewer which increases to 30-inch diameter as it gravity flows west to the San Luis Rey Wastewater Treatment Plant by way of the North Valley Sewer Lift Station. This lift station is located at 3930 North River Road.

The North River Road Trunk Sewer extends east in North River Road to Stallion Drive where the Rainbow MWD flow enters the City of Oceanside sewer system. The Sewer Master Plan October 2015 does not show any Near-Term or Long-Term improvements to the North River Road Trunk Sewer.

There are local collector sewers in Calle Montecito, and Calle Joven. An existing 8-inch sewer main in Calle Joven flows east to Calle Montecito then north to North River Road where it connects to the existing 27-inch gravity trunk sewer.

Potential Sewer System Improvements

The potential sewer system improvements discussion will be divided between the onsite sewer collection system and potential offsite sewer improvements.

Onsite Sewer System. Local sewers for the project may include an onsite private sewer collection system. Private collector sewers would connect to the existing 8-inch public sewer in Calle Joven pending confirmation of adequate capacity. Additional study can determine how many dwelling units can be accommodated by the existing 8-inch public sewer in Calle Joven and Calle Montecito. As an alternative, the onsite private sewer collection system can make a new connection to the existing 27-inch or 30-inch North River Road Trunk Sewer. This trunk sewer line will have capacity for at least a portion of the proposed residential project as will be discussed in the following paragraphs.

Offsite Gravity Sewer Piping. As noted earlier in this memorandum, the October 2015 Sewer Master Plan does not identify any Near-Term nor Long-Term improvements needed for the North River Road Trunk Sewer. This means that there is sewer flow capacity available for the existing land use for the subject project.

By re-zoning the two parcels of interest to medium density residential, the sewage generation increases by 83,076 gpd PWWF. This is equivalent to 0.083 mgd. This is a small increment of flow in a gravity sewer system where the existing 30-inch sewer has a full pipe capacity ranging from 8 mgd to 11 mgd depending on the slope. If the sewer is flowing between half full and full, the incremental flow from the proposed project would constitute a maximum of 2 percent of the total flow.

As part of the entitlement process for this proposed project, a sewer analysis would need to be completed to assess the impact of the increase in peak sewer flow added to the North River Road Trunk Sewer by the proposed project. The analysis would determine the project's cost share for any necessary improvements.

North Valley Sewer Lift Station. The North Valley Sewer Lift Station receives all the flow from the North River Road Trunk Sewer and pumps it to the San Luis Rey Wastewater Treatment Plant. Many areas of the City of Oceanside flow into the North River Road Trunk Sewer and to the North Valley Sewer Lift Station including the flow from Rainbow MWD.

The City's Sewer Master Plan, October 2015, Chapter 8, discusses the City's lift stations and force mains. Table 8.1 on page 8-2 of the Sewer Master Plan summarizes future sewer lift station capacities for the City's lift stations. For the North Valley Sewer Lift Station, Table 8.1 shows a firm pumping capacity of 8.52 mgd and an existing peak wet weather flow to the lift station of 6.69 mgd. The long term peak wet weather flow to the North Valley Sewer Lift Station is shown in the table to be 7.34 mgd.

The incremental Peak Wet Weather Flow from the proposed North River Road PBD project is 0.083 mgd. Thus, when adding this incremental flow to the estimated long term flows to the North Valley Sewer Lift Station, the total flow is 7.42 mgd which is less than the firm pumping capacity of 8.52 mgd. This suggests that there is sufficient pumping capacity at the North Valley Sewer Lift Station to accommodate the additional sewage flow.

However, the City has expressed concern about the North Valley Sewer Lift Station over the past two years primarily because of a lack of response time during an operational emergency. The main reason for their concern is that the lift station does not have any emergency storage volume. Therefore, the lift station is at greater risk of a sewage spill. In addition, the City is reviewing the pumping capacity of the existing pumps; as sewage flows increase, new pumps may be needed.

Since the North River Road PBD project is proposing a change in zoning which will increase sewage flow generation as compared to the October 2015 Master Plan projections, the project, when entitled, will be expected to contribute its share of the costs for potential North Valley Sewer Lift Station modifications.

Wastewater Treatment Plant Capacity

Because of the proposed change in land use for the project the sewage flow generated by these properties will be greater than what was accounted for in the October 2015 Master Plan. The additional peak sewage flow is estimated to be 0.083 mgd. The buy-in cost for wastewater treatment and disposal is expected to be satisfied by the payment of the sewer connection fees on a per dwelling unit basis. Since the San Luis Rey WWTP is undergoing expansion to accommodate the flows from the La Salina WWTP which is being shut down, there is not a concern that the small increment of flow generated by the proposed project can be accommodated by the San Luis Rey WWTP.

AO:ah

EXHIBIT A

EXISTING SEWER FACILITIES

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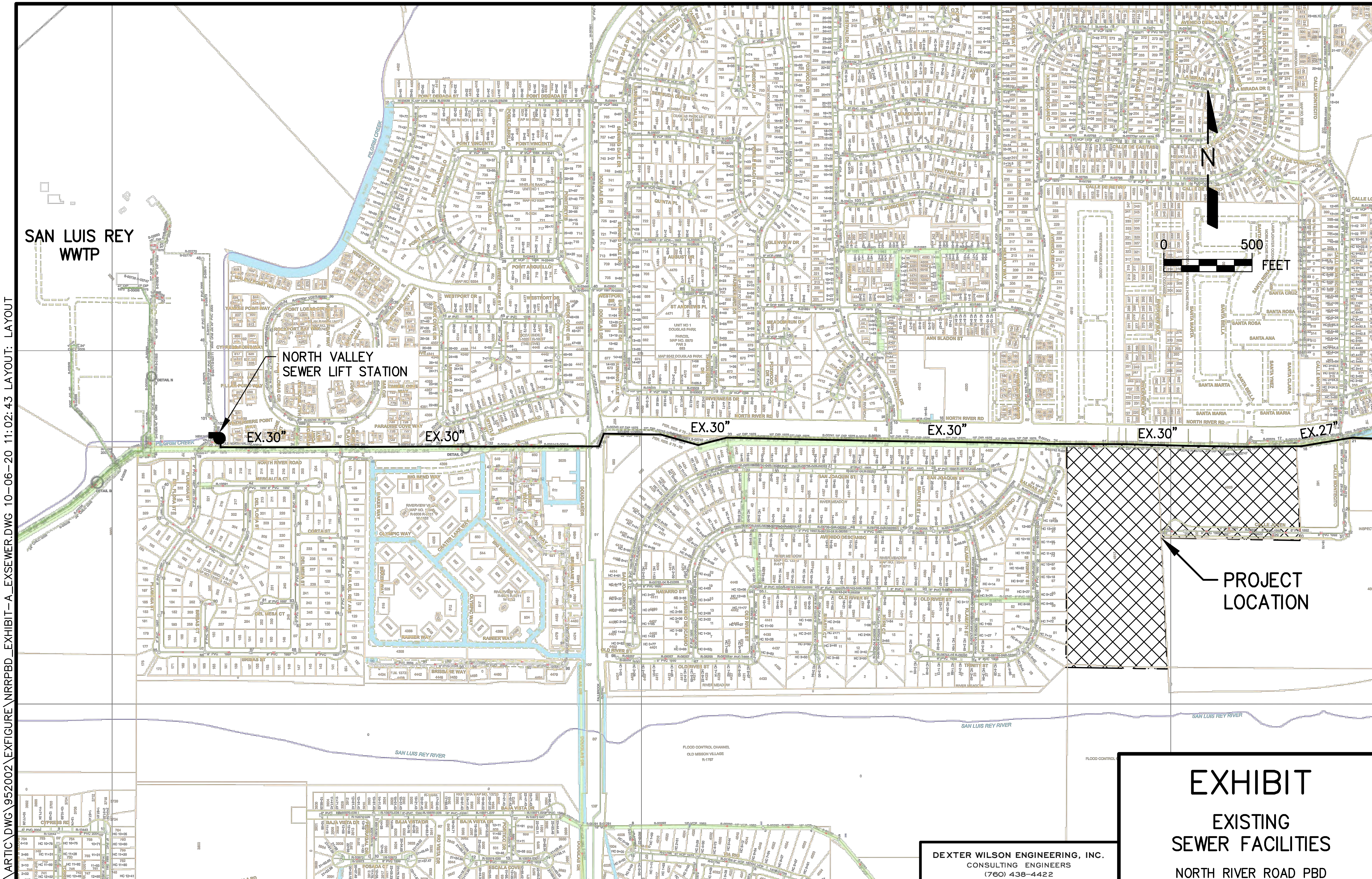

APPENDIX S
WATER SERVICE OVERVIEW

DEXTER WILSON ENGINEERING, INC.

DEXTER S. WILSON, P.E.
ANDREW M. OVEN, P.E.
STEPHEN M. NIELSEN, P.E.
NATALIE J. FRASCHETTI, P.E.
STEVEN J. HENDERSON, P.E.

MEMORANDUM **952-002**

TO: **Dan Niebaum, A.I.C.P., Lightfoot Planning Group**

FROM: **Andrew M. Oven, P.E., Dexter Wilson Engineering, Inc.**

DATE: **October 6, 2020**

SUBJECT: **North River Road Planned Block Development Overlay District – Water Service Overview**

Introduction

The proposed North River Road Planned Block Development Overlay District includes two separate parcels located at 4665 North River Road (Parcel A, APN 157-060-40) and 4617 North River Road (Parcel B, APN 157-060-17). These properties comprise approximately 25.6 acres of land located on the south side of North River Road generally between Avenida Descanso and Calle Montecito in the North Valley Neighborhood of the City of Oceanside. Parcel A consists of a total land area of 9.7 acres; however, approximately 1.8 acres are composed of existing roadway and emergency access rights-of-way. Thus, Parcel A contains 7.9 gross developable acres of land which reduces the total developable acreage for both parcels to 23.8 acres.

The purpose of this technical memorandum is to address water service to the proposed project. This memorandum will outline the existing water facilities in the vicinity of the proposed project and qualitatively comment on the ability of the existing facilities to provide adequate water service.

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Land Use

The Planned Block Development Overlay District property is currently designated as Light Industrial (LI) by the City of Oceanside General Plan, and as Limited Industrial (IL) under the City's Comprehensive Zoning Ordinance. The project proponent is planning to make application to amend the current land use designation to Medium Density - C Residential (MDC-R) and rezone the property to Medium Density Residential C (RM-C) to allow for future residential development of the site.

The North River Road PBD property is including in its re-zoning proposal a maximum cap of 400 dwelling units for the combined two parcels. This results in dwelling unit density of 16.8 units/acre.

Water Demand

As stated above, the existing land use for the project site is Light Industrial. Water demand based on this land use is calculated using the water demand factor for Industrial Land Use from Table 3.5 Water Demand Factors, Water Master Plan, City of Oceanside, June 2015 – Final.

Here is the calculation for water use for the project site based on existing land use.

23.8 acres x 2,500 gpd/ac = 59,500 gpd average (66.7 AFY)

The proposed land use for the project site is Medium-Density Residential. From the Water Master Plan cited above, the water demand factor for Medium-/High-Density Residential is 3,000 gpd/acre. The water use expected for the proposed project is calculated below.

23.8 acres x 3,000 gpd/ac = 71,400 gpd average (80.0 AFY)

Based on the change in land use, the proposed project is estimated to increase the water use for this site by 11,900 gpd, or 13.3 AFY.

From the Water, Sewer, and Recycled Water Design and Construction Manual (August 2017), the Maximum Day peaking factor is 2.0 and the Peak Hour peaking factor is 3.0. Using these factors Table 1 below provides as summary of the changes in water demand due to the proposed change in land use for the proposed project.

TABLE 1
COMPARISON OF WATER DEMANDS

Land Use	Average Demand	Maximum Day Demand	Peak Hour Demand
Current	59,500 gpd	119,000 gpd	178,500 gpd
	41.3 gpm	82.6 gpm	124 gpm
Proposed	71,400 gpd	142,800 gpd	214,200 gpd
	49.6 gpm	99.2 gpm	149 gpm
Difference	11,900 gpd	23,800 gpd	35,700 gpd
	8.3 gpm	16.5 gpm	24.8 gpm

Fire Flow Needs

The existing Land Use designation of Light Industrial equates to a planning level fire hydrant flow of 4,000 gpm per the Water, Sewer, and Recycled Water Design and Construction Manual (August 2017), Table 2-1. For the proposed Land Use designation of Medium Density Residential, the planning level fire flow reduces to 3,000 gpm.

Existing Water System

Exhibit A presents the existing water system in the vicinity of the proposed project. The proposed project fronts North River Road between Avenida Descanso and Calle Montecito. There are existing potable water lines in North River Road, Calle Montecito, and Calle Joven. Calle Joven extends along the south side of the eastern parcel.

The proposed project site is within the Talone 320 Pressure Zone with the local water piping connected to the 5.0 million gallon Pilgrim Creek Reservoir. In North River Road is a 14-inch 320 Pressure Zone water main which extends west to Douglas Drive and then south to Mission Avenue where it connects to a 24-inch transmission main. The 14-inch water line in North River Road extends east and continues north in Vandegrift Boulevard increasing in size to 18-inch and 24-inch as it works its way to Pilgrim Creek Reservoir off of Douglas Drive east of Vandegrift Boulevard.

There is an existing 16-inch cast iron pipe in North River Road along the project frontage. This is a non-potable water line which may at one time have been used for ground water. No connections are intended to be made to this pipeline.

Available System Pressure

Based on approximate elevations on the proposed project site ranging from 65 feet to 70 feet, the maximum static pressure within the site will be 110 psi. This is in conformance with the Water, Sewer, and Recycled Water Design and Construction Manual (August 2017).

Potential Water System Improvements

The potential water system improvements discussion will be divided into two basic components: water system piping and water storage.

Water System Piping. The June 2015 Water Master Plan does not identify any Talone 320 Pressure Zone improvements needed for the piping serving the proposed project. Since the current Land Use for the site is designated Light Industrial, it is expected that the water system is capable of delivering 4,000 gpm fire flow. With the proposed change in Land Use, the fire flow will decrease by 1,000 gpm. Even though the Maximum Day Demand for the proposed project will increase by 16.5 gpm, the overall Maximum Day Demand plus Fire Flow for the proposed project will be less than the current Land Use because of the reduction in fire flow from 4,000 gpm to 3,000 gpm. Therefore, the existing potable water piping in the vicinity of the project will be adequate to serve the project.

Water System Storage. The June 2015 Water Master Plan addresses water storage in the Talone Pressure Zone. It identifies a water storage shortfall of 7.04 million gallons in the Talone Pressure Zone and identifies two four-million-gallon tanks to be constructed to eliminate the storage deficit. The Master Plan also states that 88 percent of the new storage capacity is attributed to existing users. Therefore, the proposed project will need to contribute its share of the future users' storage capacity based on the additional average water demand of 11,900 gpd.

Recycled Water Service

The City of Oceanside is undertaking an expansion of their recycled water distribution system. A new recycled water distribution pipeline is scheduled to be installed in North River Road from the San Luis Rey Wastewater Treatment Plant to points east of the project property. The timeline for construction of this recycled water main is late 2020 to the end of 2022. Development of the proposed project would include connecting to the recycle water distribution main for irrigation services.

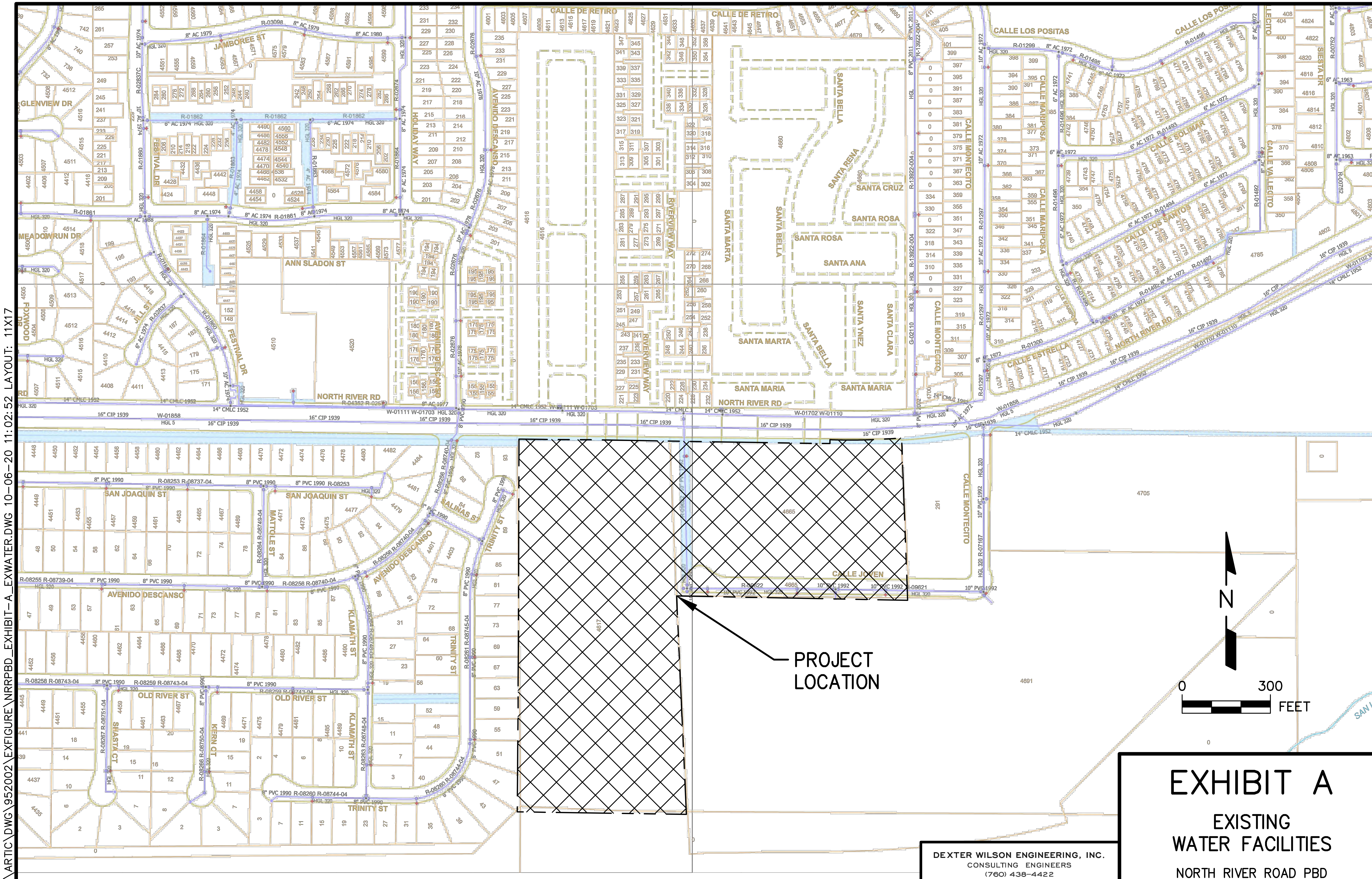
Ground Water Wells

The City of Oceanside Water Utilities Department requires that any ground water wells that are on the property must be identified on proposed development plans. As a condition of providing water service the City will require that any ground water rights associated with an existing well or associated with the property be ascribed to the Water Utilities Department.

AO:ah

EXHIBIT A

EXISTING WATER FACILITIES



DEXTER WILSON ENGINEERING, INC.
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EXHIBIT A

EXISTING WATER FACILITIES

NORTH RIVER ROAD PBD

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