Notice of Preparation and Responses & Reissued Notice of Preparation

A
APPENDIX

Notice of Preparation

To:	Interested Parties
Date:	July 20, 2022
Subject:	Notice of Preparation of Draft Subsequent Environmental Impact Report City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments
Lead Agency:	City of Mill Valley

NOTICE IS HEREBY GIVEN THAT the City of Mill Valley will be the Lead Agency under the California Environmental Quality Act (CEQA) and will prepare a Draft Subsequent Environmental Impact Report (DSEIR) for the proposed project. This NOP includes a project description and an overview of the potential impacts that will be addressed in the DSEIR.

Project Title: City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments

Project Applicant: City of Mill Valley

Project Location: City of Mill Valley

The project description, location map, and the potential environmental effects are contained in the attached document.

The purpose of this notice is: (1) to serve as the Notice of Preparation to potential Responsible Agencies, agencies involved in funding or approving the project, and Trustee Agencies responsible for natural resources affected by the project, pursuant to Section 15082 of the CEQA Guidelines; and (2) to advise and solicit comments and suggestions regarding the preparation of the DSEIR, environmental issues to be addressed in the DSEIR, and any related issues, from interested parties in addition to those noted above, including interested or affected members of the public. The City of Mill Valley requests that any potential Responsible or Trustee Agency responding to this notice do so in a manner consistent with CEQA Guidelines Section 15082(b).

All parties that have submitted their names and mailing addresses will be notified as part of the project's CEQA review process. If you wish to be placed on the mailing list or have any questions or need additional information, please contact the person identified below. A copy of the NOP and attachment document is on the City's website (https://www.cityofmillvalley.org/) and is on file at the City Hall offices, located at the address provided below.

Scoping Meeting:

Date: Thursday, August 4, 2022
Time: 6:30 P.M.
Location: Via telephonic/electronic meeting. Link will be posted on City website (https://www.cityofmillvalley.org/) no later than time and date of the meeting.

30-Day NOP Review Period: In accordance with CEQA, should your agency have any comments, it is requested to provide a written response to this NOP within the 30-day NOP review period between July 21, 2022 and August 22, 2022. Written comments must be received at the address below no later than 5:00 p.m. on August 22, 2022.

Please indicate a contact person in your response and send it to the following contact:

Patrick Kelly, Director of Building & Planning
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

July 20, 2022

Date

Patrick Kelly

Patrick Kelly, Director of Building & Planning

City of Mill Valley
2023-2031 Housing and Land Use Elements Updates and Zoning Amendments
Notice of Preparation

2023-2031 Housing Element Update Overview

The City of Mill Valley (City) is updating its Housing Element in order update the City's housing policies and programs through 2031 and to accommodate the Regional Housing Needs Allocation (RHNA) for the City as determined by the California Department of Housing and Development and the Association of Bay Area Governments. The Housing Element update also requires amendments to the General Plan Land Use Element, as well as the Mill Valley Municipal Code (MVMC), including the Zoning Ordinance (MVMC, Title 20).

Setting/Project Location

The City of Mill Valley is bounded on the east by U.S. Highway 101 and the unincorporated neighborhoods of Strawberry and Alto; on the north by the cities of Corte Madera and Larkspur; on the west by Mount Tamalpais; and on the south by the unincorporated neighborhoods of Homestead and Almonte, and Richardson Bay. Mill Valley and its relationship to surrounding cities and communities are illustrated in Figure 1, Regional Map.

Mill Valley is surrounded by the hillsides and steep ridges of the coastal mountains and the water of Richardson Bay, which form natural edges to urban growth. Many of the ridgelines that create the dominant visual backdrop for the community are now preserved as permanent open space. Much of the bayfront land has been preserved as park and open space, providing important habitat as well as visual and physical access to Richardson Bay and the greater San Francisco Bay beyond. Creeks, marshes, redwood groves, heavily forested and grass-covered hillsides, and chaparral are commonplace. Single-family residential neighborhoods are located in the valleys and on the hillsides, with commercial and more intensive residential uses clustered on the flat low lands, in close proximity to transit and along the main arterial roadways. The residential and commercial areas, together with the natural setting, create a small-town community character that is cherished by the area's residents (City of Mill Valley 2013).

General Plan Elements to be Amended

Housing Element

State law requires the City to have and maintain a general plan with specific contents in order to provide a vision for the City's future, and inform local decisions about land use and development, including issues such as circulation, conservation, and safety. The Housing Element is one of the state-mandated elements of the General Plan. State law specifically requires the City to update the Housing Element of its General Plan by January 15, 2023, while making any changes to other elements of the General Plan needed to maintain internal consistency and undertaking any related changes to the City's Municipal Code (including the City's Zoning Ordinance). The City's Housing Element for the 2015-2023 planning period was adopted in May 2015. In accordance with State law, the eight-year planning period for the updated Housing Element will extend from 2023 to 2031; this is also referred to as the 6th Cycle Housing Element Update. The City is updating its Housing Element to comply with the requirements of State law by analyzing existing and projected housing needs, and updating goals, policies, objectives, and implementation programs for the preservation, improvement, and development of housing for all income categories.

Regional Housing Needs Allocation (RHNA)

The Housing Element Update addresses any changes that have occurred since adoption of the current (2015-2023) Housing Element. These changes include, among others, updated demographic information, housing needs data, and analysis of the availability of housing sites. The Housing Element map of available housing sites is updated to identify sites that could accommodate the City's Regional Housing Needs Allocation (RHNA) for the 2023-2031 planning period. The final RHNA allocation, broken down by income level, for the City is shown below in Table 1, Mill Valley 2023-2031 Final RHNA Allocation.

Table 1 Mill Valley 2023-2031 Final RHNA Allocation

Income Level	Units
Very Low Income (Less than 50 percent of Area Median Income)	262
Low Income (50 to 80 percent of Area Median Income)	151
Moderate Income (80 to 120 percent of Area Median Income)	126
Above Moderate Income (Above 120 percent of Area Median Income)	326
Total RHNA Allocation	865

SOURCE: ABAG 2021

Community Outreach

Over the last nine months, the City has held four public workshops, conducted two public surveys, held a series of focus group meetings and tabling events, and held several City Council, Planning Commission, and Housing Advisory Committee Meeting debriefs as reflected in Table 2, Mill Valley Housing Element Update Outreach Events. One of the primary goals of the workshop series was to engage the community in a conversation that focused on identifying varying housing-related policy considerations and issues, and methodically developing Mill Valley's vision and planning framework for addressing regional and local housing needs, and meeting the State-mandated RHNA.

Table 2 Mill Valley Housing Element Update Outreach Events

Type of Outreach	Date	Targeted Outreach/Action	Summary of Outreach
City Council Debrief (in person)	September 1, 2021	Review and approval of Draft Schedule and Outreach Plan	Project Kick-Off: Discuss the proposed Work Plan, including schedule and public outreach for the Housing Element Update.
Survey #1 (online)	September-October 2021	Inform and gather input	Online survey (118 responses) regarding housing needs, goals and interests from the community.
Workshop #1 (online)	September 23, 2021	Inform, listen and gather input	City staff reviewed Housing Element Update requirements and overall process, discussed housing trends and demographics, and reviewed existing housing goals (38 individuals registered).
City Council Debrief (in person)	October 10, 2021	Inform and review comments	Review housing needs and input from the community, including workshop 1 and online survey.
Workshop #2 (online)	November 10, 2021	Inform, listen, and gather input	This workshop focused on the sites analysis. The workshop provided an overview of the requirements for a sites analysis, the overall process and criteria used to evaluate and identify potential locations or sites to accommodate new housing. (64 individuals registered).

Type of Outreach	Date	Targeted Outreach/Action	Summary of Outreach
Survey #2 (online and paper copies available)	January-February 2022	Inform and gather input	Online survey (1,039 responses) regarding strategies for identifying sites and housing programs of interest.
City Council Debrief (in person)	February 7, 2022	Inform and review comments	Review of Workshop 2 and preliminary responses from online survey #2.
Focus Group Meetings and Tabling (online and in person)	January-March 2022	Inform, listen, and gather input	Focus groups to discuss: housing needs; strategies to address RHNA and developing housing programs, including: Mill Valley School District (January 12, 2022); Farmers Market (February 9, 2022); Housing Advocates, including Mill Valley Affordable Housing Committee, Mill Valley Force for Racial Equity and Empowerment and Mount Tam Community Land Trust (February 10, 2022).
Workshop #3 (online)	February 16, 2022	Inform, listen and gather input	City staff reviewed a series of draft scenarios to develop its sites inventory to achieve the City's RHNA allocation (175 individuals registered).
Joint City Council/Planning Commission Meeting (in person)	March 22, 2022	Comment and advise	Joint study session to review the proposed housing strategies and draft sites inventory list to achieve the City's RHNA allocation.
Workshop #4 (online)	April 28, 2022	Inform, listen, and gather input	City staff reviewed existing housing programs and provided an opportunity to discuss new housing policies and programs to address community interests (64 individuals registered).
Housing Advisory Committee Meeting (online)	May 17, 2022	Review, comment, and advise	Review of feedback from Workshop 4 and Draft Chapter 2, Housing Programs (48 individuals registered).

SOURCE: City of Mill Valley 2022

Sites Inventory

The Housing Element Update will identify specific sites appropriate for the development of multifamily housing (including affordable units), and the City would rezone those sites as necessary to meet the requirements of State law. The preliminary sites inventory list of existing and proposed sites that can accommodate development of multifamily housing includes sites that are located throughout Mill Valley, and is subject to refinement based on additional public input and review of the draft Housing Element by City's Planning Commission and City Council, and the California Department of Housing and Community Development. A summary of the maximum development potential for all sites is included below in Table 3, Sites Inventory Summary. Locations of the potential housing sites are shown on Figure 2, Sites Inventory Map.

Table 3 Sites Inventory Summary

Type of Site	Number of Sites	Number of Units (Anticipated Based on Existing Use without Rezoning)	Number of Units (Maximum Based on Allowable Density After Rezoning)
Vacant Single-Family Zoned Sites	88	88	88
Projected SB 9 Lot Splits	10	40	40
City-Owned Site (1 Hamilton)	1	40	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites under ½ acre with Housing Overlay[1]	35	149	328
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay[1]	27	258	492
Office Conversions with Housing Overlay	13	65	173
Totals	174	640	1,171

SOURCE: City of Mill Valley 2022

NOTE: 1. The City anticipates no change in the existing commercial square footage on each of the opportunity sites with existing commercial uses.

In addition to the Sites Inventory, the City anticipates an additional 160 Accessory Dwelling Units (ADUs) based on the City's 4-year trend of issuing over 20 new ADU building permits a year. Additional units are also anticipated based on three overlay districts proposed and the rezoning of 300 East Blithedale and the Presidio Neighborhood. See details below.

Land Use Element

The Land Use Element will be amended to redesignate land use designations on the Land Use Map and Land Use Categories Table contained in the General Plan based on proposed rezoning for the parcels and areas discussed below.

Amendments to Land Use/Zoning

The proposed project includes amending the general plan land use designations and redesignating the zoning district for several parcels in Mill Valley in order to create consistent land use and zoning designations and accommodate the City's RHNA allocation. The sites identified by City staff requiring amendments to land use designations and zoning amendments include the following locations as reflected in Figure 2, Sites Inventory and Figure 3, 300 East Blithedale Ave and Presidio Neighborhood.

300 East Blithedale Avenue

The 0.5-acre site, located at 300 East Blithedale Avenue, is currently operating as a server building for Comcast inside an existing building. The parcel is currently zoned for single-family use. Amending the General Plan designation and rezoning the property to multi-family would result in a maximum of eight units. Table 4, 300 East Blithedale Existing and Proposed Conditions, presents a breakdown of existing and proposed land use and zoning conditions at the site.

Table 4 300 East Blithedale Existing and Proposed Conditions

	Existing	Proposed
General Plan Land Use Designation	Single Family Residential (SFR-2)	Multi-Family Residential (MFR-1)
Zoning District	Single-Family Residential, minimum lot size of 6,000 square feet (RS-6)	Multi-Family Residential Parkway (RM-P)
Density Range	One (1) dwelling units per acre to seven (7) dwelling units per acre	Nine (9) dwelling units per acre to 15 dwelling units per acre
Total Units (excluding Accessory Dwelling Units permitted by-right under State law)	0	8

SOURCE: City of Mill Valley 2022

Presidio Neighborhood (Properties Currently Zoned RM-3.5)

Currently the Presidio neighborhood, located in close proximity to Downtown between Forrest Street and Millwood Street, consist of 64 parcels in which the Single-Family land use designation in the General Plan does not align with the RM-3.5 zoning designation. As part of the Housing Element Update, the land use and zoning for these properties will be updated to ensure General Plan and zoning consistency. The General Plan land use designation for these properties will be amended from Single Family to "Downtown Residential" and the "RM 3.5" zoning will be modified to “Downtown Residential” with maximum densities remaining at 15 unit/acre. Table 5, Presidio Neighborhood Existing and Proposed Conditions, presents a breakdown of existing and proposed land use and zoning conditions at the site.

Table 5 Presidio Neighborhood Existing and Proposed Conditions

	Existing	Proposed
General Plan Land Use Designation	Single Family Residential (SFR-2)	Multi-Family Residential (MFR-1)
Zoning District	Multi-family Residential minimum lot 3,500 square feet (RM-3.5)	Downtown Residential (DR)
Density Range	Per SFR 2 Land Use: One (1) dwelling units per acre to seven (7) dwelling units per acre Per RM 3.5 Zoning: up to 15 units per acre	Nine (9) dwelling units per acre to 15 dwelling units per acre
Units (excluding Accessory Dwelling Units or Duplexes permitted by-right under State Law)	94	15

SOURCE: City of Mill Valley 2022

In the Presidio Neighborhood, assessor data indicates one (1) parcel operating as commercial use; 22 parcels operating as multi-family use and 41 parcels operating as single-family use. Modification of the zoning designation to Downtown Residential allows all existing uses to remain, and permits the redevelopment and use of property as either single-family or multi-family. The average size parcel in this neighborhood is less than 5,000 square feet. Based on allowable densities and assuming that all parcels convert to a multi-family use, an additional 15 units could be added (excluding Accessory Dwelling and Duplex Units permitted by right under State Law).

Site Inventory Housing Overlays

To accommodate its regional housing numbers and to facilitate the development of housing in Mill Valley, the following three Overlay Zoning Districts and Zoning Map Update will be adopted in conjunction with the Housing Element Update process. As such, the following housing overlays will specifically apply to those properties identified on the City’s Sites Inventory list under the categories of office conversion; underutilized “small lot” sites and opportunity sites.

- **Small Lot Housing Overlay:**

  The “small lot overlay zone” will apply to those parcels that are less than ½ acre as identified on the sites inventory list.

  The following modified standards apply to projects seeking to develop a parcel through this overlay district:

  1. reduced parking (1 space per unit for units less than 1,000 square feet);

2. increased height up to 40-feet for buildings being raised to address the floodplain management requirements or to provide higher ceiling heights on the first floor of a mixed-use building;
3. increased density up to 40 units/acre; and
4. exemption to the inclusionary housing requirement for those projects that provide units that are 1,000 square feet or less.

- **Opportunity Site Housing Overlay:** Those parcels identified on the sites inventory that are ½ acre or more may apply for the "opportunity site housing overlay" and Density Bonus as part of the redevelopment of the parcel, which will include the following modified standards:

  1. reduced parking (1 parking space for units less than 1,000 square feet);
  2. increased height up to 40' for buildings being raised to address the floodplain or to provide higher ceiling heights on the first floor of a mixed use building;
  3. revised density standards: minimum density of 20 units/acre and maximum density of 40 units/acre;
  4. full residential projects permitted;
  5. mixed use projects must have at least 50% of the floor area for residential uses;
  6. lot consolidation permitted to facilitate proposed development; and
  7. those redevelopment projects that designate 20% of the units as affordable to lower income households are subject to by-right ministerial approval by the Planning Director (not subject to a hearing or discretionary review) as required by state law.

- **Office Conversion Overlay:** The "office conversion overlay zone" will apply to those parcels identified on the sites inventory that currently utilize upper floor space as office space.

  The following modified standards apply to projects seeking to develop a parcel through this overlay district:

  1. grandfathering parking based on existing parking on site so long as the proposed units are 1,000 square feet or less and the footprint of the building is not expanded;
  2. modified density standard, up to 40 units/acre;
  3. exemption to the inclusionary housing requirement for those projects that provide units that are 1,000 square feet or less; and
  4. ministerial approval (no hearing) based on objective standards to streamline approval.

Other Zoning Code Amendments

Various amendments to code section addressing Commercial Zones (20.36 through 20.48), plus some changes under 20.66 Design Review.

- Modifications to Design Review, as discussed above;

- Removal of Conditional Use Permit for residential use in commercial zoned districts;
- Modification of Development Standards based on state law, including but not limited to State Density Bonus and creating objective standards and guidelines; and
- Modification of allowable uses and development standards based on state law, including but not limited to emergency shelters, residential care facilities and low barrier navigation centers.

Summary of Zoning Map and Land Use Amendments

The proposed project includes amending the Zoning Ordinance as referenced above. In doing so, as reflected in Table 6, Summary of Zoning Map and Land Use Amendments, the following amendments will be made to the Zoning Map and General Plan Land Use Map and Land Use Categories Table.

Table 6 Summary of Zoning Map and Land Use Amendments

Site/Location	Proposed Zoning Amendment	Proposed Land Use Map	Proposed Land Use Density Category
300 East Blithedale Avenue	Multi-Family Residential Parkway (RM-P)	Multi-Family Residential (MFR-1)	Nine (9) dwelling units per acre to 15 dwelling units per acre
Presidio Neighborhood (RM3.5 Zoning District)	Downtown Residential (DR)	Multi-Family Residential (MFR-1)	Nine (9) dwelling units per acre to 15 dwelling units per acre
Small Lot Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	17 dwelling units per acre to 40 dwelling units per acre
Office Conversion Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	17 dwelling units per acre to 40 dwelling units per acre
Opportunity Site Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	20 dwelling units per acre to 40 dwelling units per acre

SOURCE: Mill Valley 2022

Subsequent EIR Approach

Consistent with CEQA Guidelines Section 15162, the EIR will provide subsequent environmental analysis to the 2013 *City of Mill Valley 2040 General Plan Certified Final EIR* (general plan EIR), updating existing analysis where appropriate, and presenting new analysis where necessary. This subsequent EIR will evaluate only the impacts resulting from the amendments to the general plan elements. The subsequent EIR will not evaluate total buildout of the amended General Plan.

CEQA Guidelines section 15146 states that, "The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." The underlying activity is adoption of the 2023-2031 Housing Element and associated general plan and zoning amendments. Therefore, the subsequent EIR will evaluate the environmental impacts of the 2023-2031 Housing Element to the greatest degree feasible; however, later environmental review in compliance with CEQA may be required when development proposals requiring discretionary action are proposed. Later projects may be able to "tier" off of this SEIR, meaning they can rely on the environmental analysis in this document to the extent applicable to their project, limiting environmental analysis to impacts not previously identified, or increases to impacts that were previously identified.

Probable Environmental Effects

Based on a review of the general plan EIR, the following environmental issues have been determined to be adequately addressed in the general plan EIR and will not be addressed further in the subsequent EIR:

- Agricultural and Forestry Resources;
- Cultural Resources (with the exception of Tribal Cultural Resources);
- Geology and Soils (including Paleontological Resources);
- Hazards and Hazardous Materials (with the exception of Sea Level Rise and Wildfire);
- Hydrology and Water Quality; and
- Mineral Resources.

Environmental effects to be addressed in the subsequent EIR will be based on a review of the environmental analysis contained in the general plan EIR and an understanding of current conditions in the city. Probable environmental effects associated with adoption of the 2023-2031 Housing Element and associated updates to the City's Land Use Element and Zoning Ordinance will be addressed in the subsequent EIR and are briefly discussed below.

Aesthetics

The aesthetics discussion and analysis in the general plan EIR will be utilized in this section, and updated where necessary to address the proposed project. For example, the project may include increasing the allowed heights of buildings. This section will address both project-level and cumulative visual resource impacts.

Air Quality

This section of the subsequent EIR will reflect current air quality analyses, as well as current federal, state, regional, and local regulations. The proposed project could result in an increase in operational criteria air emissions through new vehicle trips generated by additional housing. The proposed project may also increase community health risks and hazards by placing sensitive receptors near existing or planned sources of toxic air contaminants (TACs) or other hazardous emissions.

Biological Resources

The biological resources section of the subsequent EIR will utilize the California Natural Diversity Database (CNDDB) to determine whether there have been any status changes to special status plant and wildlife species, and whether the general plan EIR adequately addresses sensitive biological resources to current standards.

Energy

The proposed project is presumed to create new development capacity that would result in increased energy demand. The three primary sources of energy demand would likely be fuel use in vehicles, and electricity and natural gas use in buildings. The net change in demand for these types of energy will be modeled in CalEEMod and EMFAC. Because the threshold of significance for energy impacts is qualitative, the impact discussion and analysis will also be qualitative.

Greenhouse Gas Emissions

The City is anticipating that it will adopt and updated climate action plan (CAP) in the summer of 2022. The forthcoming update to the City's will include GHG emission projections that incorporate the new residential development capacity enabled by the Housing Element Update. Consequently, the Housing Element would be consistent with the CAP and GHG reduction measures included in the CAP would be applicable to that new residential development. Consequently, the GHG impact analysis can be streamlined pursuant to CEQA Guidelines section 15183.5. The Housing Element Update GHG impact would be less than significant provided each new future individual project made possible is conditioned to implement applicable GHG reduction measures found in the updated CAP.

In addition, this section of the subsequent EIR will address potential impacts associated with sea level rise. CEQA does not require the evaluation of the environment's impact on a project, but does require an analysis if a project contributes to an environmental effect that could have an effect on a project. The general plan EIR and updated CAP address sea level rise. Existing documentation will be used in this section of the subsequent EIR to present the anticipated flooding impacts of sea level rise, and a qualitative discussion as to how the project could exacerbate these flooding issues.

Noise

This section will address whether the proposed project would result in an increase in the noise levels identified in the general plan EIR with implementation of the proposed project. Cumulative project impacts will be discussed.

Public Services

This section will address whether the proposed project would require new or expanded public services facilities, and whether those facilities would result in significant environmental impacts. Public services to be addressed include fire protection and emergency medical services, law enforcement, public schools and recreation facilities. Cumulative project impacts will be discussed.

Transportation

The transportation section of the subsequent EIR will address the vehicle miles traveled (VMT) impacts of the project. VMT was not a required component of a CEQA transportation impact analysis when the general plan EIR was prepared.

Tribal Cultural Resources

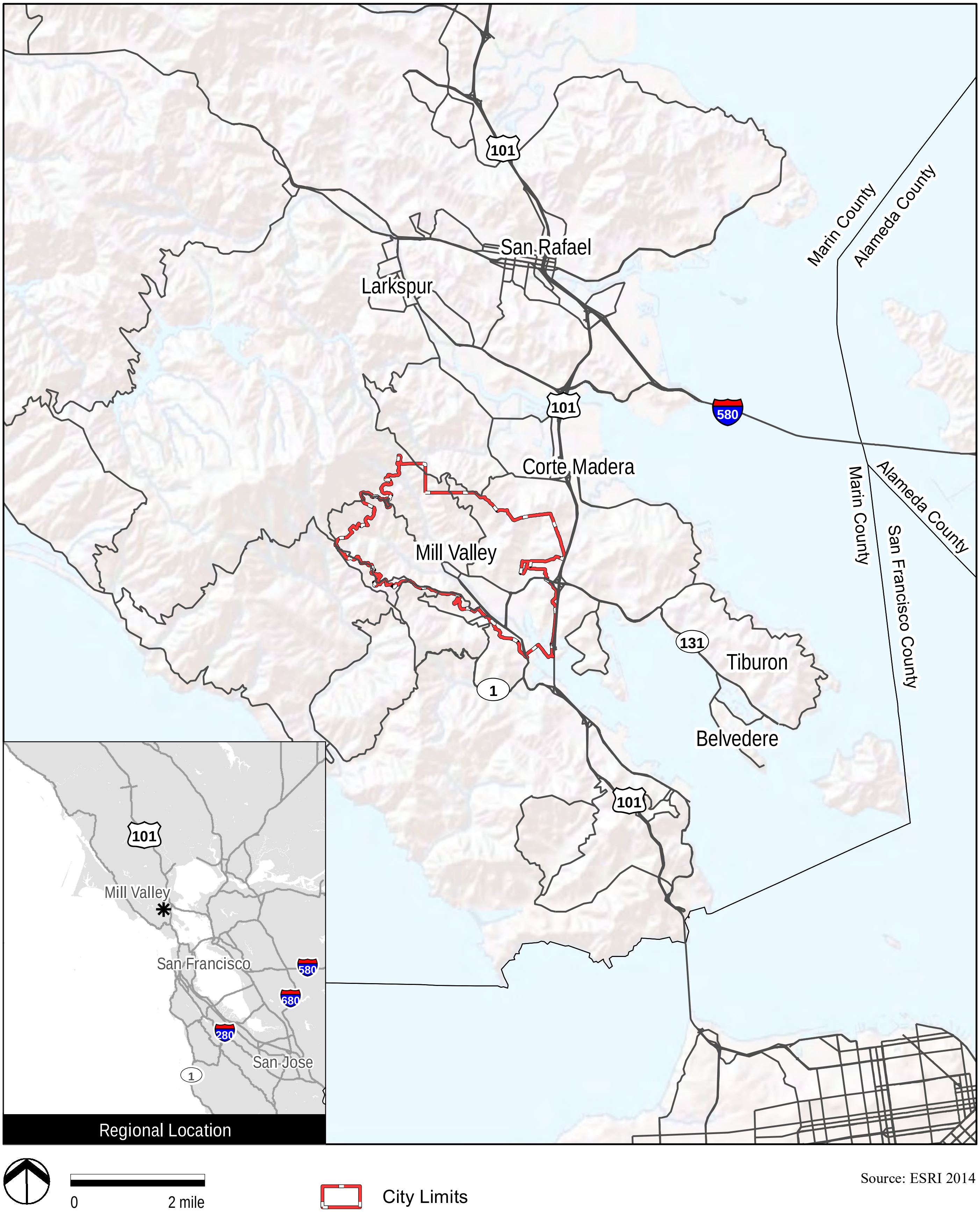
This section of the subsequent EIR will report on the City's SB 18 and AB 52 Tribal Consultation process, which was not a required component of the CEQA cultural resources impact analysis when the general plan EIR was prepared. If consultation does occur, this section will address whether the proposed project may have an adverse change on the significance of a tribal cultural resource.

Utilities and Service Systems

This section will address possible physical changes associated with expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, sufficient water supplies, waste water treatment capacity, and solid waste. Various agencies will be consulted including City of Mill Valley, Marin Municipal Water District, Sewerage Agency of Southern Marin, PG&E, Mill Valley Refuse Service, and the Redwood Landfill. Cumulative project impacts will be discussed.

Wildfire

This section of the subsequent EIR will address whether the project would substantially impair an adopted emergency response plan or emergency evacuation plan; expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; require installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or expose people or structures to significant risks, including downslope of downstream flooding or landslides as a result of runoff, postfire slope instability, or drainage changes. Cumulative project impacts associated with wildfire hazards will also be discussed.



Source: ESRI 2014

Figure 1

Regional Map

City of Mill Valley 2023-2031 Housing and Land Use Element
Update and Zoning Amendments NOP

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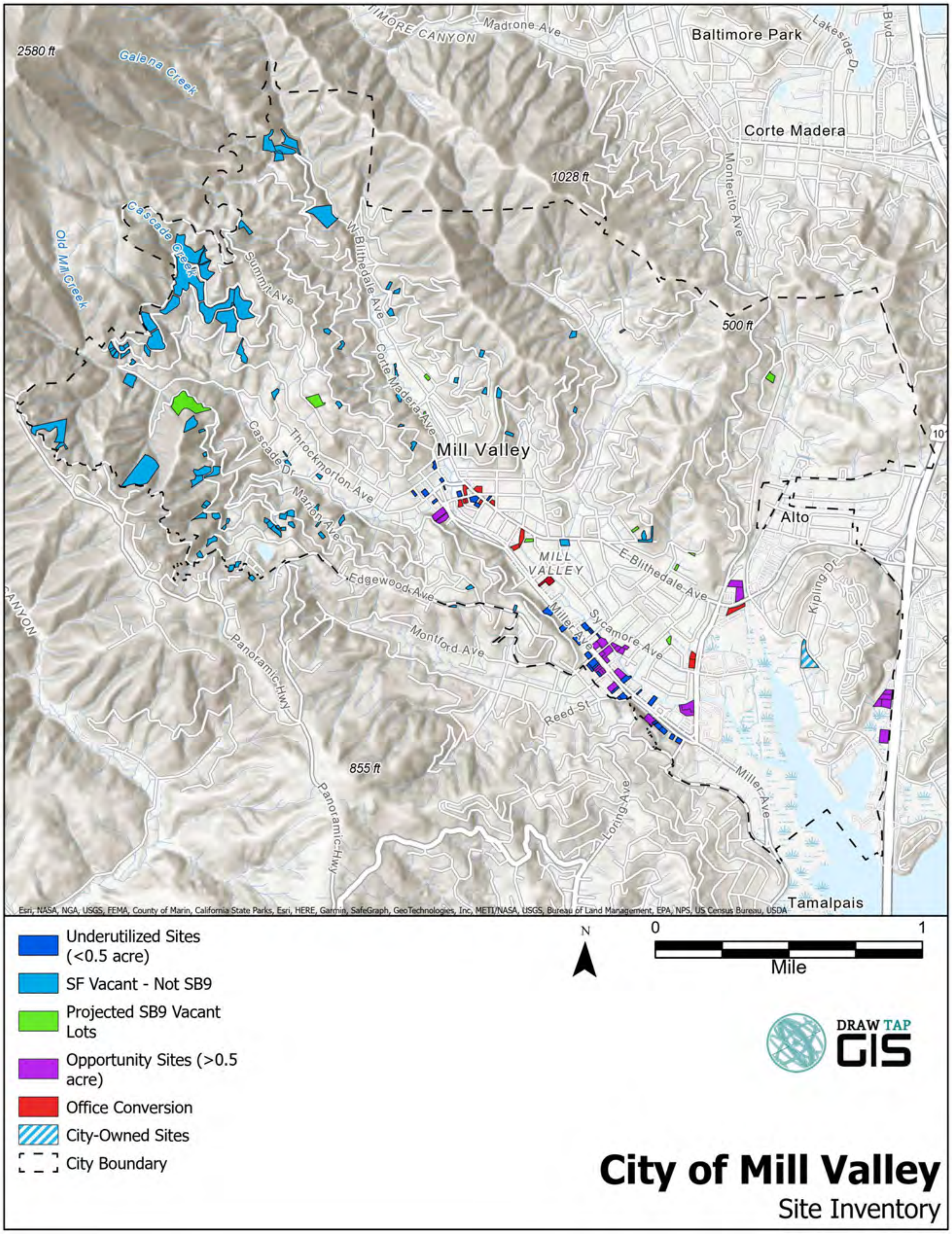

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Source: City of Mill Valley 2022

Figure 2

Sites Inventory Map

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Source: Marin County GIS 2022, Google Earth 2022

Figure 3

300 East Blithedale Ave and Presidio Neighborhood

City of Mill Valley 2023-2031 Housing and
Land Use Element Update and Zoning Amendments NOP

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NATIVE AMERICAN HERITAGE COMMISSION

RECEIVED
JUL 27 2022
Finance Department
City of Mill Valley

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 22, 2022

Patrick Kelly
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

Re: 2013052005, City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments Project, Marin County

Dear Mr. Kelly:

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 <u>portions</u> 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 (https://ohp.parks.ca.gov/?page_id=30331) 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: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

August 11, 2022

Mr. Patrick Kelly
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941
PKelly@cityofmillvalley.org

Subject: City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments, Notice of Preparation of a Draft Subsequent Environmental Impact Report, SCH No. 2013052005, City of Mill Valley, Marin County

Dear Mr. Kelly:

The California Department of Fish and Wildlife (CDFW) reviewed the Notice of Preparation (NOP) of a Draft Subsequent Environmental Impact Report (EIR) for the City of Mill Valley (City) 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments (Project).

CDFW is providing the City, as the lead agency, with specific detail about the scope and content of the environmental information related to CDFW's area of statutory responsibility that must be included in the EIR (Cal. Code Regs., tit. 14, § 15082, subd. (b)).

CDFW ROLE

CDFW is a **Trustee Agency** with responsibility under the California Environmental Quality Act (CEQA) for commenting on projects that could impact fish, plant, and wildlife resources (Pub. Resources Code, § 21000 et seq.; Cal. Code Regs., tit. 14, § 15386). CDFW is also considered a **Responsible Agency** if a project would require discretionary approval, such as a permit pursuant to the California Endangered Species Act (CESA) or Native Plant Protection Act (NPPA), Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Pursuant to our authority, CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT DESCRIPTION AND LOCATION

The Housing Element Update will include updates to the City's housing policies and programs through 2031 and accommodate the Regional Housing Needs Allocation for the City, as determined by the California Department of Housing and Development and the Association of Bay Area Governments. It will also amend the General Plan Land Use Element and the Mill Valley Municipal Code, which includes the Zoning Ordinance.

The Housing Element Update will include a sites inventory to identify sites appropriate for development of multifamily housing and rezone as necessary. The City anticipates the addition of 160 Accessory Dwelling Units (ADU), which will require over 20 new ADU building permits to be issued per year.

The Land Use Element will be amended to redesignate land use zones. This includes rezoning a 0.5-acre parcel at 300 East Blithedale Avenue, currently used as a server building for Comcast, from single-family use to multi-family use, in order accommodate a maximum of eight dwelling units. It will also rezone the Presidio neighborhood from single family residential to multi-family residential, which may result in the addition of 15 dwelling units. The Land Use Element will also adopt three housing overlay zoning districts to accommodate regional housing numbers and facilitate the development of housing.

The CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) require that the EIR incorporate a full project description, including reasonably foreseeable future phases of the Project, that contains sufficient information to evaluate and review the Project's environmental impact (CEQA Guidelines, §§ 15124 & 15378). Please include a complete description of the following Project components in the Project description:

- Land use changes resulting from, for example, rezoning certain areas.
- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

The NOP identifies that the EIR will be a Program EIR. While Program EIRs have a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with an EIR or large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning approval at hand. The CEQA Guidelines section 15168, subdivision (c)(4) states, "Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." Based on CEQA Guidelines section 15183.3 and associated *Appendix N Checklist*, and consistent with other program EIRs, CDFW recommends creating a procedure or checklist for evaluating subsequent project impacts on biological resources to determine if they are within the scope of the Program EIR or if an additional environmental document is warranted. This checklist should be included as an attachment to the EIR. Future analysis should include all special-status species and sensitive habitat including but not limited to species considered rare, threatened, or endangered species pursuant to CEQA Guidelines, section 15380.

When used appropriately, the checklist should be accompanied by enough relevant information and reasonable inferences to support a "within the scope" of the EIR conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis should be prepared by a qualified biologist to provide the necessary supporting information. In addition, the checklist should cite the specific portions of the EIR, including page and section references, containing the analysis of the subsequent Project activities' significant effects and indicate whether it incorporates all applicable mitigation measures from the EIR.

REGULATORY REQUIREMENTS

California Endangered Species Act and Native Plant Protection Act

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA or NPPA, either during construction or over the life of the Project. Issuance of a CESA ITP is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, such as those identified in **Attachment 1**, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA ITP.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially restrict the range or reduce the population of a threatened or endangered species (Pub. Resources Code, §§ 21001, subd. (c) & 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with CESA.

Lake and Streambed Alteration Agreement

CDFW will require an LSA Notification, pursuant to Fish and Game Code sections 1600 et. seq. for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW, as a Responsible Agency under CEQA, will consider the CEQA document for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA as a Responsible Agency.

ENVIRONMENTAL SETTING

The EIR should provide sufficient information regarding the environmental setting ("baseline") to understand the Project's, and its alternative's (if applicable), potentially significant impacts on the environment (CEQA Guidelines, §§ 15125 & 15360).

CDFW recommends that the CEQA document prepared for the Project provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including but not limited to all rare, threatened, or endangered species (CEQA Guidelines, § 15380). The EIR should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see: https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities), and any stream or wetland set back distances the City may require. Fully protected, threatened or endangered, candidate, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include but are not limited to those listed in **Attachment 1**.

Habitat descriptions and the potential for species occurrence should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System, and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB). Based on the data and information from the habitat assessment, the EIR should adequately assess which special-status species are likely to occur on or near the Project site, and whether they could be impacted by the Project.

CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://www.wildlife.ca.gov/Conservation/Survey-Protocol.

Botanical surveys for special-status plant species, including those with a California Rare Plant Rank (http://www.cnps.org/cnps/rareplants/inventory/)[1], must be conducted during the blooming period within the Project area and adjacent habitats that may be indirectly impacted by, for example, changes to hydrological conditions, and require the identification of reference populations. More than one year of surveys may be necessary based on environmental conditions. Please refer to CDFW protocols for surveying and evaluating impacts to special status plants available at: https://www.wildlife.ca.gov/Conservation/Plants.

IMPACT ANALYSIS AND MITIGATION MEASURES

The EIR should discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project (CEQA Guidelines, § 15126.2). This includes evaluating and describing impacts such as:

- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development;
- Encroachments into riparian habitats, wetlands or other sensitive areas;
- Potential for impacts to special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alternation of soils and hydrology, and removal of habitat structural features (e.g., snags, roosts, vegetation overhanging banks);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic or human presence; and
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The CEQA document should also identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact – e.g., reduction of available habitat for a special-status species – should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines direct the lead agency to consider and describe all

[1] California Rare Plant Rank (CRPR) 1B plants are considered rare, threatened, or endangered in California and elsewhere. Further information on CRPR ranks is available in CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline) and on the California Native Plant Society website (https://www.cnps.org/rare-plants/cnps-rare-plant-ranks).

feasible mitigation measures to avoid potentially significant impacts in the EIR, and/or mitigate significant impacts of the Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.2, 15126.4 & 15370). This includes a discussion of impact avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with CDFW, USFWS, and the National Marine Fisheries Service. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels.

ENVIRONMENTAL DATA

CEQA requires that information developed in EIRs and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB. The CNNDB online field survey form and other methods for submitting data can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plantsand-Animals.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish & G. Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

If you have any questions, please contact Alicia Bird, Environmental Scientist, at (707) 980-5154 or Alicia.Bird@wildlife.ca.gov; or Melanie Day, Senior Environmental Scientist (Supervisory), at (707) 210-4415 or Melanie.Day@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

Attachment 1: Special-Status Species

ec: State Clearinghouse # 2013052005

Stuart Poulter, EMC Planning Group, Poulter@emcplanning.com

Attachment 1: Special-Status Species

Species Name	Common Name	Status
Reithrodontomys raviventris	Salt-marsh harvest mouse	FP, SE, FE
Rallus obsoletus obsoletus	California Ridgeway's rail	FP, SE, FE
Laterallus jamaicensis coturniculus	California black rail	FP, ST
Strix occidentalis caurina	Northern spotted owl	ST, FT
Elanus leucurus	White-tailed kite	FP
Aquila chrysaetos	Golden eagle	FP, BGEPA
Agelaius tricolor	Tricolored blackbird	ST
Dicamptodon ensatus	California giant salamander	SSC
Rana boylii	foothill yellow-legged frog	SSC
Geothlypis trichas sinuosa	Saltmarsh common yellowthroat	SSC
Melospiza melodia samuelis	San Pablo song sparrow	SSC
Circus hudsoniusI	Northern harrier	SSC
Antrozous pallidus	Pallid bat	SSC
Corynorhinus townsendii	Townsend's big-eared bat	SSC
Bombus occidentalis	Western bumble bee	ICP
Plagiobothrys glaber	hairless popcornflower	CRPR 1A
Helianthella castanea	Diablo helianthella	CRPR 1B.2
Microseris paludosa	marsh microseris	CRPR 1B.2
Fissidens pauperculus	Minute pocket moss	CRPR 1B.2
Microseris paludosa	Marsh microseris	CRPR 1B.2
Horkelia tenuiloba	thin-lobed horkelia	CRPR 1B.2
Gilia millefoliata	dark-eyed gilia	

Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	CRPR 1B.2
Quercus parvula var. *tamalpaisensis*	Tamalpais oak	CRPR 1B.3
Arctostaphylos montana ssp. *montana*	Mt. Tamalpais manzanita	CRPR 1B.3
Kopsiopsis hookeri	small groundcone	CRPR 2B.3

FP = state fully protected under Fish and Game Code; FE = federally listed as endangered under the Endangered Species Act (ESA); FT = federally listed as threatened under ESA; SE = state listed as endangered under CESA; ST = state listed as threatened under CESA; BGEPA = federal Bald and Golden Eagle Protection Act; ICP = California Terrestrial and Vernal Pool Invertebrate of Conservation Priority [2]; SSC = state Species of Special Concern; CRPR = California Rare Plant Rank

[2] The list of California Terrestrial and Vernal Pool Invertebrates of Conservation Priority was collated during CDFW's Scientific Collecting Permit rulemaking process: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157415&inline

DISTRICT 4
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August 19, 2022

SCH #: 2013052005
GTS #: 04-MRN-2022-00264
GTS ID: 27106
Co/Rt/Pm: MRN/101/VAR

Patrick Kelly, Director of Building & Planning
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

Re: City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)

Dear Patrick Kelly:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update Project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the July 2022 NOP.

Project Understanding

The City of Mill Valley is updating its Housing Element in order to update the City's housing policies and programs and to accommodate the Regional Housing Needs Allocation (RHNA) for the City as determined by the California Department of Housing and Development and the Association of Bay Area Governments. In accordance with State law, the eight-year planning period for the updated Housing Element will extend from 2023 to 2031; this is also referred to as the 6th Cycle Housing Element Update. The Housing Element update also requires amendments to the General Plan Land Use Element, as well as the Mill Valley Municipal Code, including the Zoning Ordinance.

Travel Demand Analysis

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses

Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide (*link*). Please note that current and future land use projects proposed near and adjacent to the State Transportation Network (STN) may be assessed, in part, through the TISG.

Transportation Impact Fees
We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT. Caltrans welcomes the opportunity to work with the City and local partners to secure the funding for needed mitigation. Traffic mitigation or cooperative agreements are examples of such measures.

Lead Agency
As the Lead Agency, the City of Mill Valley is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Equitable Access
If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email LDR-D4@dot.ca.gov.

Sincerely,

Mark Leong

MARK LEONG
District Branch Chief
Local Development Review

c: State Clearinghouse

SOLURI MESERVE
a law corporation

tel: 916.455.7300 · fax: 916.244.7300
510 8th Street · Sacramento, CA 95814

August 15, 2022

SENT VIA EMAIL (pkelly@cityofmillvalley.org)

Patrick Kelly, Director of Building and Planning
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

RE: Public Comments to the City of Mill Valley's Notice of Preparation of the 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments

Dear Mr. Kelly:

On behalf of Friends of Hauke Park ("FOHP"), this letter provides comments regarding the City of Mill Valley's Notice of Preparation ("NOP") for the General Plan Housing and Land Use Element Update and Zoning Amendments ("Project"). As explained more fully below, the NOP includes substantive inconsistencies and even factual misrepresentations regarding existing conditions as well as the scope of the Project and its relationship to the proposed residential development at 1 Hamilton ("Hamilton Project"). Action is required by the City, including possibly a revised NOP, to correct these deficiencies.

1. False Information Regarding Existing Conditions

CEQA requires that an EIR evaluate, and that public agencies mitigate or avoid, significant effects of projects in the "area which will be affected by a proposed project." (Cal. Code Regs., tit. 14, § 15000 et seq. ("CEQA Guidelines"), § 15360.) The project description is the activity the EIR must evaluate for environmental impact (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 271-272; Pub. Resources Code, § 21065), while the environmental setting (i.e., baseline) is the condition of the environment against which the EIR will evaluate project changes for environmental harm (*Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310, 315). Therefore, CEQA requires that an EIR adequately describe the environmental setting. (*Ibid*; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874; CEQA Guidelines, § 15125.)

Here, the City is off to a bad start as the NOP sets forth demonstrably false information regarding existing conditions. Specifically, the NOP asserts that 40 residential units are allowed at 1 Hamilton under existing conditions:

Table 3 Sites Inventory Summary

Type of Site	Number of Sites	Number of Units (Anticipated Based on Existing Use without Rezoning)	Number of Units (Maximum Based on Allowable Density After Rezoning)
Vacant Single-Family Zoned Sites	88	88	88
Projected SB 9 Lot Splits	10	40	40
City-Owned Site (1 Hamilton)	1	40	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites under ½ acre with Housing Overlay[1]	35	149	328
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay[1]	27	258	492
Office Conversions with Housing Overlay	13	65	173
Totals	**174**	**640**	**1,171**

SOURCE: City of Mill Valley 2022

NOTE: 1. The City anticipates no change in the existing commercial square footage on each of the opportunity sites with existing commercial uses.

This information is demonstrably false. 1 Hamilton's General Plan land use designation is Community Facilities (Land Use Element, p. 25), and its zoning designation is Open Area ("O-A") (see existing Housing Element, p. C-19). Both designations prohibit residential development. The Land Use Element's Community Facilities description includes, "All City facilities including City golf course, parks, City Hall, Community Center, Public Safety Building, etc.; public schools and private schools." (Land Use Element, p. 24.) It further states that a residential density range is "not applicable." (*Ibid*.) Eliminating any confusion on this point, the draft Housing Element states, "The OA and CF Zoning Districts do not permit residential use on the property." (Draft Housing Element, p. C-2.)

As we explained to the City by letter dated July 29, 2022, there is no question that residential uses are prohibited at 1 Hamilton based on its General Plan land use designation and its zoning designation. Six days later, the City's PowerPoint presentation for the Project's scoping meeting included a revised table that implicitly acknowledges the NOP's error:

PROJECT DESCRIPTION SUMMARY

Type of Site	Number of Sites	Number of Units (Anticipated Based on Existing Use without Rezoning)	Number of Units (Maximum Based on Allowable Density After Rezoning)[2]
Vacant Single-Family Zoned Sites	88	88	88
Projected SB 9 Lot Splits	10	40	40
City-Owned Site (1 Hamilton)	1	0	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites under ½ acre with Housing Overlay[1]	35	149	328
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay[1]	27	258	492
Office Conversions with Housing Overlay	13	65	173
Totals[2]	**174**	**600**	**1,171**

NOTE. 1. The City anticipates no change in the existing commercial square footage on each of the sites with existing commercial uses.
NOTE 2: The "number of units" identified in this table is a conservative estimate of the number of units that will be built on these sites. In most instances the number indicated in this table will be larger than the number of units estimated for the purpose of meeting the City's Regional Housing Needs Assessment (RHNA) allocation. The number of units estimated for RHNA purposes takes into account site constraints, environmental constraints, and market trends to devise an estimate of the realistic number of units that will be built on-site. The number of units used for CEQA purposes takes into account maximum build-out to ensure that the City has analyzed potential environmental impacts adequately.

While we speculate that this PowerPoint slide represents some effort by the City to correct the NOP, more is required to acknowledge this error and eliminate any confusion resulting from the NOP's fundamentally misleading information. The environmental impacts of ten additional residential units (as suggested by the NOP) to an existing residential area are dramatically different from the environmental impacts of 50 new residential units in an area where all residential development was previously prohibited. Setting that aside, the NOP's suggestion that "existing" conditions allow residential uses raises serious questions regarding whether the City intends to rely on a shifting and inconsistent project description in order to thwart adequate CEQA review of the Hamilton Project, which is addressed below.

2. Shifting and Inconsistent Project Description

The courts have consistently held that an "accurate and stable project description" is a bedrock requirement of CEQA—the sine qua non (that without which there is nothing) of an adequate CEQA document:

> Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other

> alternatives in the balance. An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.

(*Inyo v. Los Angeles* (1977) 71 Cal.App.3d 185, 192-93 (*Inyo*).) The ability of informed citizens to participate in environmental review is a key component of CEQA. (*Washoe Meadows v. Dept. of Parks and Recreation* (2017) 17 Cal.App.5th 277, 285 (*Washoe*) ["Informed public participation is essential to environmental review under CEQA."]; *Inyo*, *supra*, 71 Cal.App.3d at 192 ["The EIR process facilitates CEQA's policy of supplying citizen input."].) Through the EIR process, CEQA "provide[s] public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment." (*Washoe*, *supra*, 17 Cal.App.5th at 286 [quoting Pub. Resources Code, § 21061].)

An interrelated bedrock CEQA principle of informed public participation is that all aspects of a proposed project, i.e., the "whole of the action," must be analyzed in an EIR. (See CEQA Guidelines, § 15378, subd. (a) [a project is the "whole of an action" which may result in direct or indirect physical changes to the environment].) This means that an EIR must include analysis of "all phases of a project" and all "reasonably foreseeable consequences" of a project. (CEQA Guidelines, § 15126 [EIR's impact analysis must consider all phases of a project]; *Laurel Height Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376 [EIR must analyze "reasonably foreseeable consequence" of a project.)

Concerns about both of these interrelated CEQA requirements are raised because the NOP is internally inconsistent about whether the Project includes changing the General Plan land use designation and zoning designation for 1 Hamilton. On one hand, NOP page 6 states, "The proposed project includes amending the general plan land use designations and redesignating the zoning district for . . . the following locations as reflected in Figure 2," which <u>includes 1 Hamilton</u>. (See NOP, Figure 2.) Further, Table 3 to the NOP 3 identifies 1 Hamilton as allowing up to 50 residential units "after rezoning." This information strongly suggests the Project includes General Plan amendment and rezoning action in order to accommodate the Hamilton Project. On the other hand, Table 6, "Summary of Zoning Map and Land Use Amendments," appears to omit any reference to 1 Hamilton. (NOP, p. 9.)

This inconsistency leaves the public to speculate about the scope of the CEQA "project" to be analyzed in the EIR. To the extent the NOP's mischaracterization of 1 Hamilton's "current" zoning is premised on the City's intention to revise 1 Hamilton's General Plan land use designation and zoning designation as part of the Project, the EIR will need to include adequate analysis of the Hamilton Project. We ask the City to directly address two simple questions:

(1) Does the CEQA project include changing 1 Hamilton's General Plan land use designation to allow residential uses?

(2) If the answer to the first question is "yes," why is the City suggesting that it will prepare a subsequent EIR for the Hamilton Project since a subsequent approval would ostensibly be exempt from CEQA review pursuant to Public Resource Code section 21083.3?

A member of FOHP attended the City's public scoping meeting on August 4, 2022, in an attempt to obtain answers to these questions. Incredibly, City officials refused to answer and, in order to avoid any follow-up questions, ended the scheduled three-hour meeting after only thirty minutes. The City's obfuscation thwarts the public's efforts to understand the City's environmental review strategy for both the Project and the Hamilton Project.

To eliminate any confusion, if the Project includes revisions to the General Plan Land Use Element and/or Zoning Ordinance that would authorize residential use of 1 Hamilton, the City must use its best efforts to find out and disclose all that it reasonably can about the Hamilton Project. (*Laurel Heights*, *supra*, 47 Cal.3d at 395-396; *Environmental Protection & Information Center v. Cal. Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 503.) As will be demonstrated by other comment letters submitted in response to the NOP, detailed project-level information is presently available regarding the proposed affordable housing project and will continue to be refined over the next several months. The City will not be allowed to shirk its duty to prepare adequate CEQA analysis of the Hamilton Project by claiming either that it has not yet been approved, or by promising (well-intentioned or not) to perform such review in the future.[1]

---

[1] Even if the City were to commit in good faith to prepare an EIR for the Hamilton Project and actually followed through with that promise, the City could later argue that any deficiencies in that EIR are not prejudicial and therefore require no corrective action. (*Del Cerro Mobile Estates v. City of Placentia* (2011) 197 Cal.App.4th 173, 179 [rejecting argument that by "preparing and certifying the EIR as if CEQA applied, the City waived any right to later invoke a potential CEQA exemption"].)

* * *

The City must take unmistakable, legally-cognizable action to correct the NOP's deficiencies identified above. A failure to do so will likely be construed by a reviewing court as evidence that the City is misleading the public regarding the Hamilton Project and the City's intended process for future review and approval. Thank you for the opportunity to comment.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By:

Patrick M. Soluri

cc: Jim Wickham, Mayor (jwickham@cityofmillvalley.org)
Urban Carmel, Vice Mayor (ucarmel@cityofmillvalley.org)
Stephen Burke, Councilmember (sburke@cityofmillvalley.org)
Sashi Sabaratnam, Councilmember (smcentee@cityofmillvalley.org)
Max Perrey, Councilmember (mperrey@cityofmillvalley.org)
G. Inder Khalsa, City Attorney (gkhalsa@rwglaw.com)
Kelsey Rogers, City Clerk (cityclerk@cityofmillvalley.org;
krogers@cityofmillvalley.org)

SOLURI MESERVE
a law corporation

tel: 916.455.7300 · fax: 916.244.7300
510 8th Street · Sacramento, CA 95814

August 22, 2022

<u>SENT VIA EMAIL</u> (pkelly@cityofmillvalley.org)

Patrick Kelly, Director of Building and Planning
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, California 94941

RE: Public Comments to the City of Mill Valley's Notice of Preparation of the 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments

Dear Mr. Kelly:

On behalf of Friends of Hauke Park ("FOHP"), this letter provides additional comments and information regarding the City of Mill Valley's Notice of Preparation ("NOP") for the General Plan Housing and Land Use Element Update and Zoning Amendments ("Project").

Our prior letter explained that we would later describe the considerable project-level information regarding the proposed Hamilton Project that is currently available, and will continue to be developed in the future. This is relevant because, as also explained previously, the City must use its best efforts to find out and disclose all that it reasonably can about the Hamilton Project. (*Laurel Heights* Improvement *Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 395-396; *Environmental Protection & Information Center v. Cal. Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 503.)

Back on February 7, 2022, the City Council took action that staff described as:

> The proposed actions direct staff to execute an ENA that establishes the contractual agreement to commence negotiations regarding disposition of a portion of 1 Hamilton Drive, as well as initiating preliminary site analysis and design work that will further define an affordable housing development that would constitute a "project" under CEQA.

(Staff report dated February 7, 2022, p. 5.) The staff report also set forth a timeline for future work to define the project:

Further, the "Schedule of Performance" between the City and the developer sets forth milestones for defining the project and even CEQA review. It provides that the "schematic design" will be developed from February through July 2022, "Environmental Phase 1" would occur in February 2022, and "Environmental Phase 2 (if necessary)" would occur in April 2022.

Consistent with this schedule, the developer hosted a public meeting on May 3, 2022, to announce its project designs. The developer proposed two different designs, the "T" and "U" designs, that also included detailed site and building layouts, building cross-sections, visual simulation, view simulation, and even "building style examples." (See Exhibit 1.) There is no question that project-level information for the Hamilton Project is well underway, which is more than adequate to support project-level CEQA review.

Indeed, the developer's architect stated at the public meeting on May 3, 2022, that a geological report for the Hamilton Project was being prepared, would be completed by the end of May, and would be shared with the public. Based on this representation, a representative of FOHP asked the City on May 26, 2022, for a copy of that geotechnical report. The City representative would not acknowledge that a geological report was being prepared, obliquely stating, "A Geologic Hazards Evaluation ***will be completed*** as part of a comprehensive environmental impact report for the project. Geotechnical studies ***will serve*** to complete the Geologic Hazards Evaluation." (Exhibit 2, email dated May 26, 2022.) Having declined to acknowledge or deny its existence, the City did not provide geological report as requested.

The City's obfuscation is troubling since it strongly suggests that the City is attempting to shield from public disclosure the existence of project-level information about the Hamilton Development as well as the existence of any technical studies that would be based on that project-level information. If the City intends for the scope of the

Project to include changes to 1 Hamilton's land use and zoning designations allowing for residential uses of any density, the City will not be allowed to shirk its duty to prepare adequate CEQA analysis of the Hamilton Project by claiming that inadequate project-level information is available.

Thank you for the opportunity to comment.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: [signature]

Patrick M. Soluri

Attachments:

Exhibit 1 Project posters presented at the May 3, 2022, public meeting
Exhibit 2 May 26, 2022, Email from Patrick Kelly, Director of Planning and Building, City of Mill Valley

cc: Jim Wickham, Mayor (jwickham@cityofmillvalley.org)
Urban Carmel, Vice Mayor (ucarmel@cityofmillvalley.org)
Stephen Burke, Councilmember (sburke@cityofmillvalley.org)
Sashi Sabaratnam, Councilmember (smcentee@cityofmillvalley.org)
Max Perrey, Councilmember (mperrey@cityofmillvalley.org)
G. Inder Khalsa, City Attorney (gkhalsa@rwglaw.com)
Kelsey Rogers, City Clerk (cityclerk@cityofmillvalley.org; krogers@cityofmillvalley.org)

EXHIBIT 1

BUILDING STYLE EXAMPLES

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

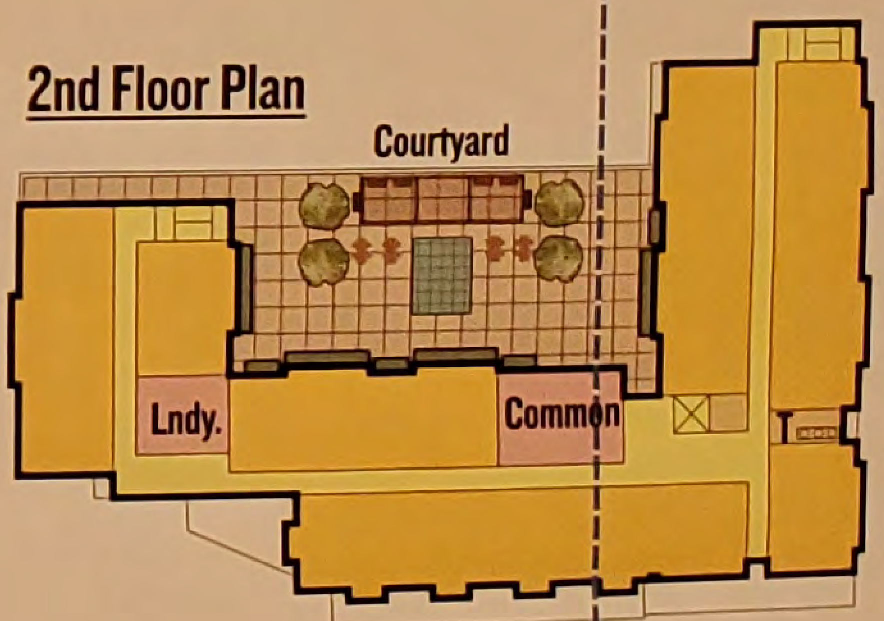
PHOTO 6

"U"-SHAPED BUILDING CONCEPT

REAR COURTYARD

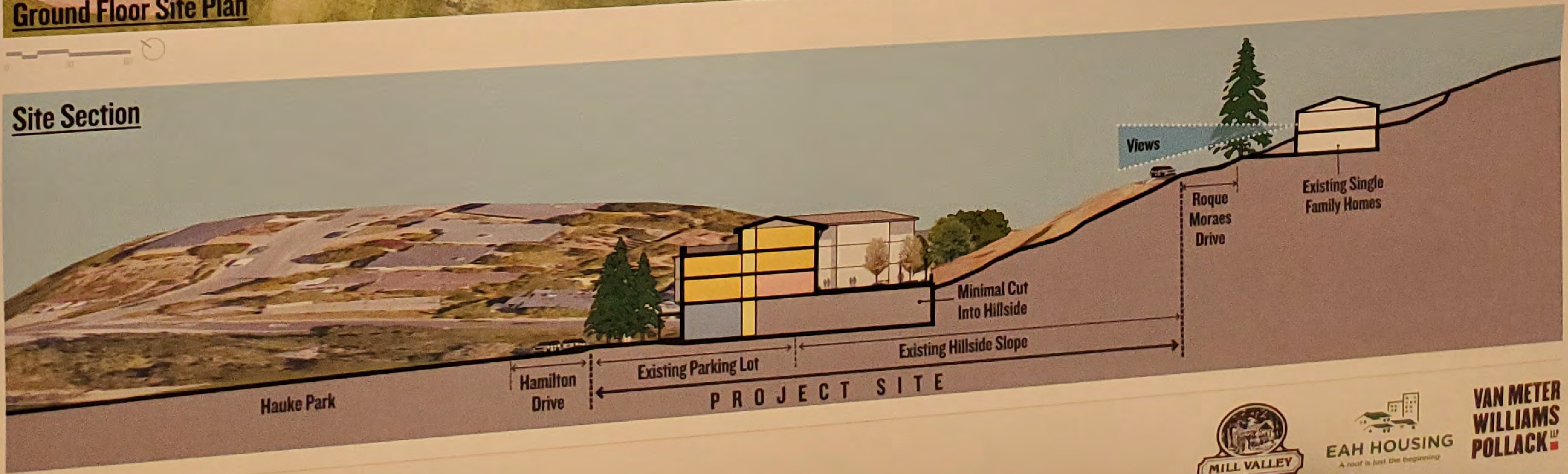
Ground Floor Site Plan

2nd Floor Plan



- Office
- Common
- Circulation
- Service
- Residential

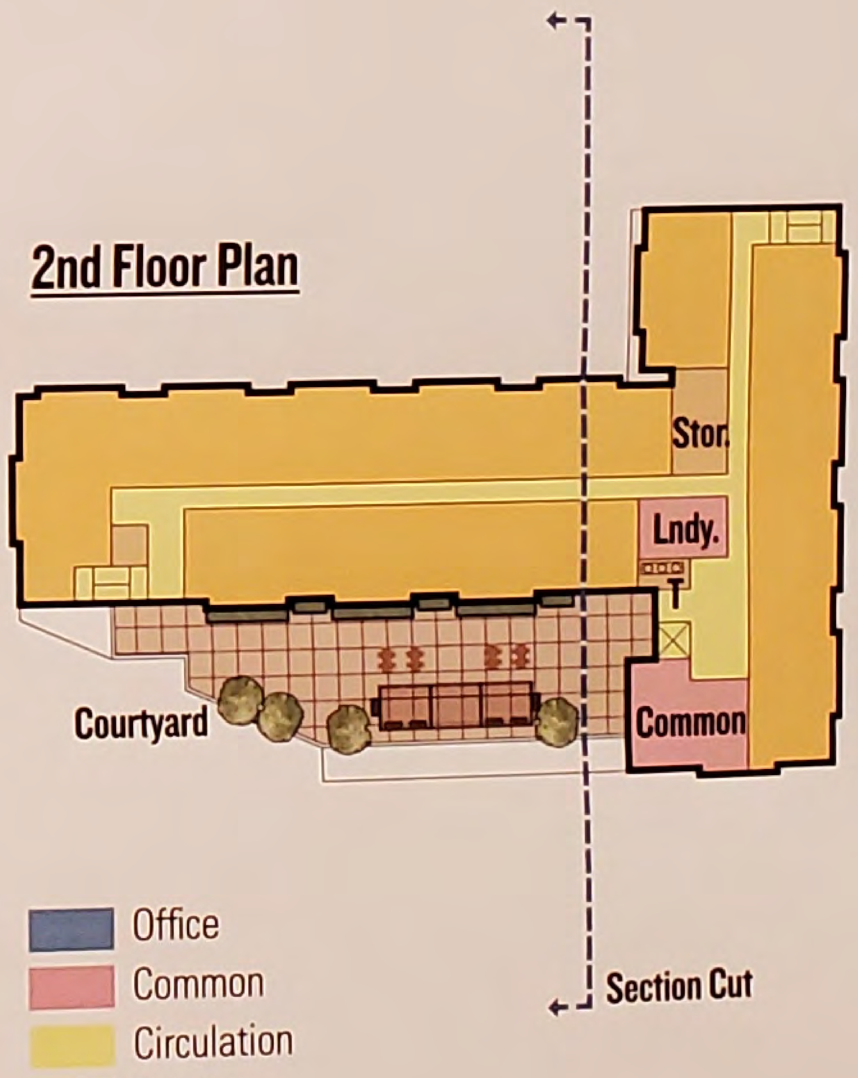
Site Section

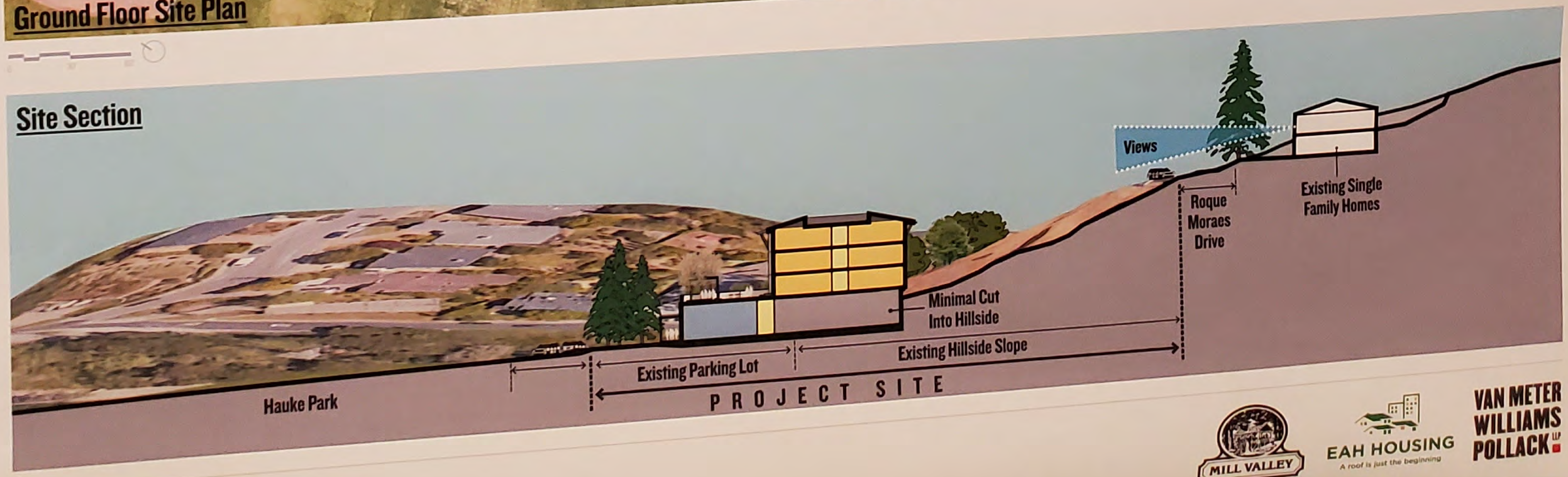


MILL VALLEY | EAH HOUSING A roof is just the beginning | VAN METER WILLIAMS POLLACK LLP

"T"-SHAPED BUILDING CONCEPT

FRONT COURTYARD





MILL VALLEY

EAH HOUSING
A roof is just the beginning

VAN METER WILLIAMS POLLACK LLP

1 HAMILTON DRIVE

MILL VALLEY, CA | MAY 2, 2022 | EAH HOUSING

VIEW SIMULATION COMPARISONS

View Facing South on Hamilton Drive

"U"-SHAPED BUILDING CONCEPT

SKETCH A

"T"-SHAPED BUILDING CONCEPT

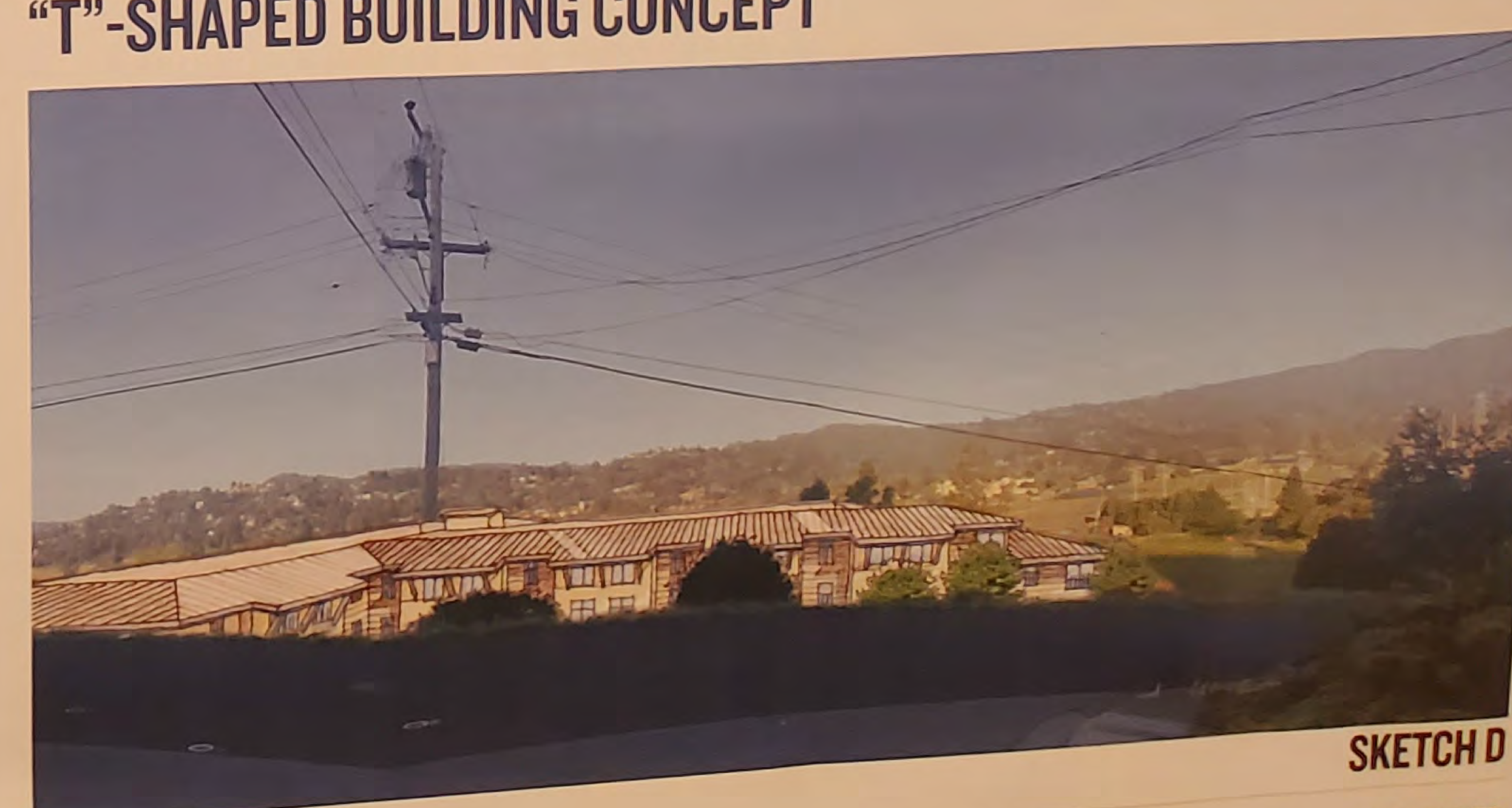
SKETCH B

View from Intersection of Roque Moraes Drive and Keats Drive

"U"-SHAPED BUILDING CONCEPT

SKETCH C

"T"-SHAPED BUILDING CONCEPT



SKETCH D

MILL VALLEY

EAH HOUSING

VAN METER WILLIAMS POLLACK

VIEW SIMULATION COMPARISONS

View from Hamilton Drive Across from Fire Station

"U"-SHAPED BUILDING CONCEPT

SKETCH E

"T"-SHAPED BUILDING CONCEPT

SKETCH F

View from Hauke Park

"U"-SHAPED BUILDING CONCEPT

SKETCH G

"T"-SHAPED BUILDING CONCEPT

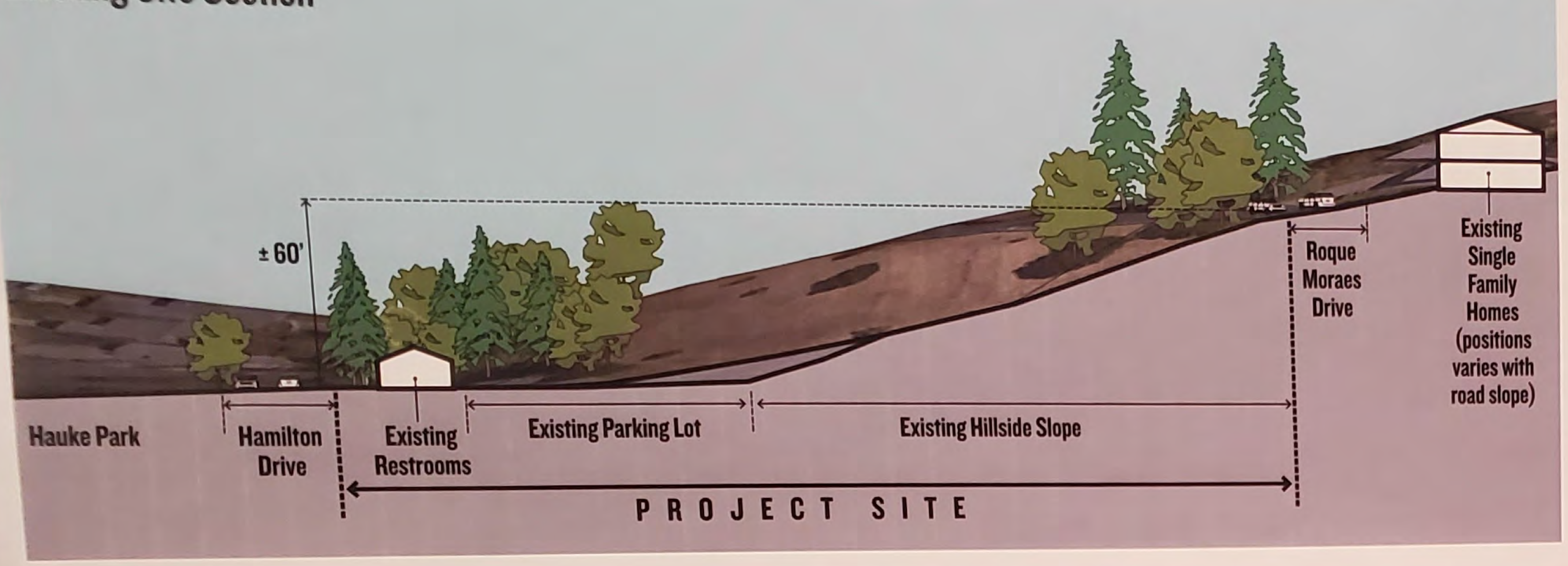
SKETCH H

MILL VALLEY

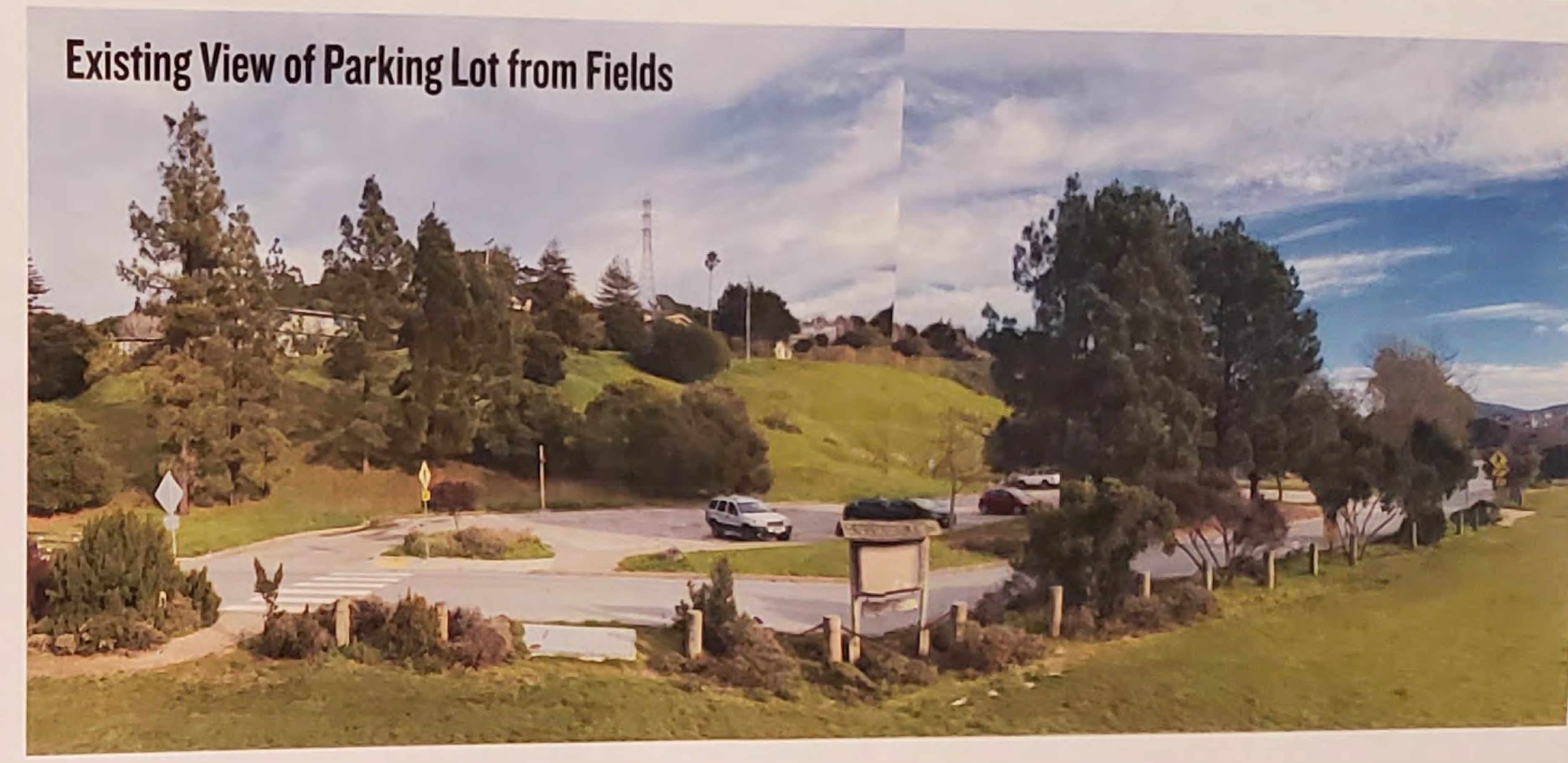
EAH HOUSING

VAN METER WILLIAMS POLLACK LLP

Existing Site Section



Existing View of Parking Lot from Fields



MILL VALLEY

EAH HOUSING

VAN METER WILLIAMS POLLACK LLP


Building on the Parking Lot
Views
PRIMARY BUILDING ZONE
Minimal Cut Into Hillside
Roque Moraes Drive
Existing Single Family Homes
Hauke Park
Hamilton Drive
Existing Restrooms
Existing Parking Lot
Existing Hillside Slope
PROJECT SITE
Building Stepping Up the Site
Potential Step Up Area
Impacts on Views
Potential Step Back Area
POTENTIAL HILLSIDE BUILDING ZONE
Hillside Slope
Roque Moraes Drive
Existing Single Family Homes
PRIMARY BUILDING ZONE
Potential Non-Habitable Area
Hauke Park
Hamilton Drive
Existing Restrooms
Existing Parking Lot
Existing Hillside Slope
PROJECT SITE
PROJECT SITE
±1.9 acres
ROQUE MORAES DR
Potential Expanded Hillside Building Location
General Building Location
HAMILTON DR
Mill Valley Fire Station
Mill Valley Police Dept.
Hauke Park
Existing RR to be Relocated
Section Cut
MILL VALLEY
EAH HOUSING
VAN METER WILLIAMS POLLACK
HAMILTON DRIVE
POTENTIAL BUILDING LOCATIONS
APRIL 7 2022 | EAH HOUSING

How we look at a Property

Building Program - What goes into the building?

UTILITIES
- Mechanical room
- Electrical room
- Communications room
- Water pump room
- Trash / recycling room
- Transformer

APARTMENTS + CIRCULATION
- Corridors and stairs
- Studio: 400 sf
- 1 Bedroom: 450 - 500 sf
- 2 Bedroom: 750 - 850 sf
- 3 Bedroom: 950 - 1,000 sf
- 20 - 25% circulation

PARKING
- 50-65 spaces
- Approximately 400 sf per parking space
- Bike storage room

COMMUNITY ROOM
- 1,000 - 1,500 sf
- Laundry room
- Service offices

MANAGEMENT + ENTRY
- Management offices
- Lobby and elevators

EXHIBIT 2

From:	Patrick Kelly
To:	paula@weavermcgrath.com
Cc:	Danielle Staude
Subject:	RE: [External] Request for Geotechnical Report for 1 Hamilton
Date:	Thursday, May 26, 2022 3:52:31 PM

Paula,

A Geologic Hazards Evaluation will be completed as part of a comprehensive environmental impact report for the project. Geotechnical studies will serve to complete the Geologic Hazards Evaluation. The environmental impact report will be initiated following completion of a project description which is a work in progress. The draft environmental impact report will be published for public review at which time the public will have the opportunity to review and comment on the document.

I will add your email address to the interested parties list to receive notifications regarding the environmental review process for the project.

Patrick Kelly, MPA, AICP
Director of Planning and Building
City of Mill Valley
26 Corte Madera Ave.
P. 415-388-4039

> **From:** Paula Weaver <paula@weavermcgrath.com>
> **Date:** May 26, 2022 at 1:25:35 PM PDT
> **To:** Danielle Staude <dstaude@cityofmillvalley.org>
> **Subject: [External] Request for Geotechnical Report for 1 Hamilton**
>
> Dear Danielle,
>
> Is the geotechnical report for the 1 Hamilton project completed and ready to be shared with the public? If so, I would like to receive a copy.
>
> Thank you.
> Paula McGrath

From:	Carlos Montalvan
To:	Patrick Kelly; Danielle Staude
Subject:	[External] NOP of EIR for the 2023-2032 MV Housing Element
Date:	Monday, August 22, 2022 4:54:53 PM

To The Mill Valley Planner and City Council Members:
I am writing in response to Mill Valley's Notice of Preparation (NOP) with the following comments:

- A separate and independent EIR must be conducted for the project at 1 Hamilton Drive, and it should be noted in this document. The Hamilton project, identified in 2023-32 Housing Element and on the Sites Inventory Summary (Table 3) of the NOP, is so large in scope that a separate EIR for 1 Hamilton is necessary.

- There is no reference to the potential need for increased public parking, or a study thereof, in the Public Services and Transportation sections of the NOP (pg 12). Parking must absolutely be part of the Review, not just traffic, and it should be noted in the NOP.

Carlos Montalvan
Keats Dr.

From:	gt tierneyconsulting.com
To:	Danielle Staude; City Clerk; Jim Wickham - Mill Valley mail; Max Perrey; Stephen Burke; Urban Carmel
Cc:	gt tierneyconsulting.com
Subject:	[External] Public comments: Notice of Preparation Mill Valley Housing and Land Use Element Update and Zoning Amendements
Date:	Monday, August 22, 2022 3:52:04 PM

Dear Mill Valley Planning Staff and City Council Members,

This letter is to comment on the Notice of Preparation (NOP) for Mill Valley's Housing and Land Use Element. I have lived in Mill Valley since 1997 and always up the street from 1 Hamilton. I care deeply about our city and being part of the solution of providing needed housing. But I find the process with which you have pushed forth the 1 Hamilton project not in keeping with our City's commitment to good overall land management, zoning and stewardship of our city owned land.

The EIR scope in the NOP is in error in not specifying a project specific EIR for 1 Hamilton. This is the only project listed in Mill Valley's Housing Element and especially with its current density, will have serious environmental impacts and safety issues to be considered. Further, a traffic analysis should be completed during normal working months to understand the traffic trips, consequences to surrounding roads and budget ramifications for future work on surrounding infrastructure due to this added traffic.

The geological study for 1 Hamilton is also missing from the scope in the NOP. On May 3rd, 2022 EAH said that the geological study was currently underway. I personally spoke to the architect who said the results were forthcoming before they could go farther in modifying the design of the building (to be more appropriate for the size of the lot, adjacencies, and neighborhood scale.) The only way for you/EAH to optimize the design and right size this project is by fully understanding the hillside and ground geology via a geological study. It seems like you don't care about the design or density issue which has been raised by your constituency consistently from the beginning.

A safety analysis is missing as well. It is imperative to all citizens of Mill Valley to keep our children safe. Sport and fitness clubs, hundreds of children, their parents and other adults use Hauke Park daily. This is your responsibility to assess the safety implications of how 50 units, cars, and construction, will impact the users of one of the most popular parks in the city.

Why is 1 Hamilton is now being designated as 50 units without any transparency, let alone public discussion? This is corrosive to our trust in you as leaders. The proposed density by EAH is bad land use especially adjacent to actively used Hauke Park, to public gardens and on top of the narrow 2-lane Hamilton Way. For the City to allow EAH to drive the density given its proximity to children is an **abdication of civic duty**.

It is imperative that the City include a project level EIR for 1 Hamilton and allow public comment prior to changing the land use designation to residential and rezoning to 50 units. In public meetings all along, we have been told repeatedly that “nothing has been decided”, “we’re in the early stages”, and “all the proper studies will be completed”. I urge you to modify the NOP to meet the City's obligation its citizens and under CEQA.

Sincerely.

Gabrielle Tierney

From:	Carolyn Heyder
To:	Patrick Kelly; Danielle Staude; Jim Wickham - Mill Valley mail; Urban Carmel; Stephen Burke; Max Perrey
Subject:	[External] Comments on Environmental Review of the 2023-2032 Housing Element
Date:	Monday, August 22, 2022 2:46:38 PM

To The Mill Valley Planner and City Council Members:

I am writing in response to Mill Valley's Notice of Preparation (NOP) with the following comments:

It is imperative that a separate EIR be conducted for the project at 1 Hamilton Drive, and it should be provided for in this document. The Hamilton project, which is the only one identified in 2023-32 Housing Element and on the Sites Inventory Summary (Table 3) of the NOP, and is also the only one currently slated for construction, is so large in scope that a separate EIR for 1 Hamilton is necessary.

In your report on page 10, you quote CEQA Guidelines section 15146 as stating that "the degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR". While this is referring to the EIR on the entire housing element, the degree of specificity involved in 1 Hamilton warrants application of that EIR guideline to 1 Hamilton.

The size, scope, and location of the 1 Hamilton project will have a major environmental impact:

1) The proposed development calls for 50 units (Table 3) on a half-acre building footprint of a parcel that is a little over one acre;
2) It will be converted from a parking lot across from Hauke Park (a widely used recreational area currently zoned open space and surrounded in large part by single family residences) that will require it to be rezoned from open space to multi-family residential in order to proceed;
3) The proposed 50+ unit, 4-5 story apartment building, which requires serious modification of allowable uses and development standards, is massive, and to my knowledge has not ever before been permitted or built in Mill Valley. Only because it is affordable housing could it be permissible, and the sheer density and size of this complex will result in serious environmental impacts to the surrounding area:

    a. it will border the Bayfront Park Habitat and Bothin Marsh Preserve - a sensitive plant and wildlife habitat, the immensity of which could pose biological impacts, and its sea level elevation could also be impacted by sea level rise (see Greenhouse Gas Emissions);
    b. the additional traffic that new residents of a 50 unit building will create and the consequences of that is a serious environmental concern (see Greenhouse Gas Emissions), will increase VMTs, (see Traffic) and will pose serious concerns for safety;
    c. it will necessitate a large number of new utility services and new water hookups (See Energy and Utilities and Service Systems). The

current drought causes this water issue to be a concerning “current condition of the city’ (see page 10).

What is troubling is that the NOP will **no**t be further addressing several listed environmental effects, and it does **not even mention** addressing traffic, biology or current conditions facing the city that should be reviewed.

My concern here is that the scope of the planned project at 1 Hamilton needs a separate EIR apart from that for the Housing Element. On page 10 of this document, it states that “later environmental review in compliance with CEQA may be required when development proposals requiring discretionary action are proposed.” Since 1 Hamilton is already a project slated for development and the size and scope are known, **now, not later**, is the time for a separate EIR for that project.

Sincerely,
Carolyn Heyder

From:	Eric Bindelglass
To:	Danielle Staude; City Clerk
Cc:	Urban Carmel; Stephen Burke; Jim Wickham - Mill Valley mail; Max Perrey; Sashi McEntee; gkhalsa@rwglaw.com
Subject:	[External] Public Comment re Notice of Preparation Mill Valley Housing and Land Use Element Update and Zoning Amendments
Date:	Monday, August 22, 2022 1:05:26 PM

Dear Mill Valley Planning Staff and City Council Members,

I am a 22-year resident of the Enchanted Knolls neighborhood in Mill Valley. I find the NOP issued by the City very confusing and misleading to the public for the reasons outlined in Mr. Soluri's letters.

I urge the City to conduct a project level EIR for 1 Hamilton and allow public comment prior to changing the land use designation to residential and rezoning to 50 units. To do otherwise is irresponsible and fails to meet the City's obligation under CEQA.

Thank you for the opportunity to submit comments. And thank you for your work on behalf of the City.

Regards,
Eric Bindelglass

From:	Grant Morris
To:	City Clerk; Danielle Staude
Cc:	Urban Carmel; Stephen Burke; Jim Wickham - Mill Valley mail; Max Perrey; Sashi McEntee; gkhalsa@rwglaw.com
Subject:	[External] Public Comment for Notice of Preparation Mill Valley Housing and Land Use Element Updates and Zoning Amendments
Date:	Monday, August 22, 2022 12:13:14 PM

Dear Mill Valley Planning Staff and City Council Members,

I have attended prior meetings and submitted comments along with many other Mill Valley residents who oppose the way the City has proceeded with the 1 Hamilton "project". Some would say there is a significant tone-deafness or even a heavy handed approach to ignoring the comments of those who will be most affected whilst downplaying the effects on the entire community. Traffic, density, children safety, and the overall appropriateness of the site have been downplayed or resident concerns have been swept under the rug. I have lived within 200 yards of Hauke Park for over 25 years, and know very well how 1 Hamilton is both a refuge and pathway for wildlife traversing from upper shelter ridge down to the adjacent wetlands.

I find the NOP issued by the City confusing and misleading to the public for the reasons set forth in Mr. Soluri's letters. The City needs to conduct a project level EIR for 1 Hamilton and allow public commentary before changing the land use designation to residential and rezoning. To do otherwise, would be irresponsible and fails to meet the City's obligations under CEQA.

Thank you for the opportunity to submit comments.

Grant Morris

From:	David Wygant
To:	Danielle Staude
Subject:	[External] Public Comment re: Notice of Preparation Mill Valley Housing and Land Use Element Updates and Zoning Amendments
Date:	Monday, August 22, 2022 9:46:45 AM

Dear Mill Valley Planning Staff and City Council Members,

Per my February 6 2022 letter, I hereby request again a separate EIR for the proposed development at 1 Hamilton please prior to changing the land use designation and rezoning.

Given that the density has risen from 20-30 units to potentially now 50 units, then previous flagged issues of traffic, accessibility, sensitive wetlands, safety, infrastructure, emergency response, open space, over-flow parking, water supply, etc. are even more important. A huge building next to a toddler playground, kids soccer field, and home of girl’s softball - REALLY??? Please start with what would be appropriate for the park & neighborhood, and then work backwards and be creative.

It’s been disappointing so far that the Housing Committee has relied on ‘rules of thumb” and biased experts, and consequently not established guardrails for this project given that the developer’s natural incentive is to maximize the density.

If you are in the habit of changing land use and zoning, how about readapting empty commercial/office space rather than constructing a new building? Spaces along Miller Ave could tap into better amenities, public transportation, and walkability, and benefit the local businesses while being environmentally/cost efficient. I hear about fire danger and flooding risk, but that doesn't seem to stop the development of new and renovated buildings and housings in Mill Valley.

Thank you, David Wygant

108 Kipling Drive Mill Valley

From:	Paula Weaver
To:	Danielle Staude; City Clerk
Cc:	Urban Carmel; Stephen Burke; Jim Wickham - Mill Valley mail; Max Perrey; Sashi McEntee; gkhalsa@rwglaw.com
Subject:	[External] Public Comment re Notice of Preparation Mill Valley Housing and Land Use Element Updates and Zoning Amendments
Date:	Monday, August 22, 2022 7:52:44 AM

Dear Mill Valley Planning Staff and City Council Members,

This letter will provide public comments re the City of Mill Valley's Notice of Preparation (NOP) referenced above. I am a 35 year resident in the Enchanted Knolls neighborhood of Mill Valley.

I agree and incorporate the points raised by the public comment letters dated August 15 and 22, 2022, submitted by Attorney Patrick Soluri on behalf of Friends of Hauke Park. I find the NOP issued by the City very confusing and misleading to the public for the reasons set forth in Mr. Soluri's letters.

The City Has Failed to Address Whether a Separate EIR Will Evaluate the Impacts of the Project at 1 Hamilton

I attended the meeting on August 4, 2022, in which the City and its consultant reviewed the scope of the EIR to be conducted pursuant to the NOP. I was one of only two members of the public who attended. I believe the poor attendance was due to the scheduling of the meeting during the summer vacation months. Public attendance would have been much higher if it had been scheduled in September. Query whether the City really wants public input on these proposed changes which will dramatically alter the general plan and zoning in the City of Mill Valley for years to come.

At the meeting on August 4, 2022, I asked a very simple question: "Would a separate EIR be conducted for 1 Hamilton, apart from the EIR currently proposed for the housing element?" The City staff member replied that the question would be answered later. This was a non-answer to the question. The meeting was scheduled for 3 hours and was cut off after 30 minutes. Several members of the public tried to log on after the meeting had been ended.

With the non-response to my question as to whether a separate EIR would be conducted, the public is left to wonder, will the scope of the EIR proposed be an adequate review of the environmental impacts for the 1 Hamilton project under CEQA? The proposed project at 1 Hamilton under the current NOP will change the land use designation from open area to residential and rezone from 0 to 50 units. The impact of such a change is enormous to the neighborhood and needs a full project level review under CEQA.

The Current Scope of the EIR in the NOP is Limited and Fails to Address at least Four Important Categories

- Geological evaluation specific to 1 Hamilton is missing from scope of the EIR presented on page 10 under the heading "Probable Environmental Effects". The scope states that "Geology and Soils (including Paleontological Resources)" will not be addressed in the EIR. This is completely contrary to the statement of the EAH representative made on May 3, 2022, in a meeting with the City representatives, EAH and Enchanted Knolls neighbors, that a geological study was currently underway and the report would be available at the end of the month. On May 26, 2022, I wrote an email to the City of Mill Valley staff asking for a copy for the geological report. The reply from planning director Patrick Kelly did not confirm or deny its existence and the report was not produced. Mr. Kelly's reply is attached to the Patrick Soluri letter of August 22, 2022 as Exhibit 2, and is incorporated by reference.

- Biological Evaluation specific to 1 Hamilton is missing from the scope of the EIR presented on page 11 and will not be addressed in this EIR or the subsequent EIR. The NOP states that it will utilize the California Natural Density Database (CNDDB) to determine "status changes to special status plant and wildlife species." I visited the 1 Hamilton site on February 4, 2022, and an expert introduced herself to me and stated she had been hired by EAH to conduct a biological study. This report has not been produced by the City.

- Traffic analysis specific to 1 Hamilton is missing from the scope of EIR. During the last week of May 2022 over the Memorial Day weekend, traffic counters were installed at various locations in the Enchanted Knolls and Eucalyptus Knolls neighborhoods to assess current traffic conditions. In my view, this study should have been conducted in the Fall when the traffic to and from Hauke Park increases dramatically with the opening of soccer season for all age levels. The report for the study conducted in May 2022 has not been produced by the City.

- Safety analysis specific to 1 Hamilton is missing from the Scope of the EIR. The City plans to amend the general plan to change 1 Hamilton from open area to residential and change the zoning from 0 to 50 units. The project will be built on a building pad of 20,000 SF, less than one-half acre, across from Hauke Park which is used by residents of all ages. It is easily the most widely used park in Mill Valley. Hundreds of children play soccer and other sports throughout the year at Hauke Park, residents from Shelter Hill, an EAH complex around the corner routinely play volleyball, other adults play soccer on the weekends and older residents use the park for nature walks. A safety analysis needs to be done to show how 50 residential units and the attendant traffic will impact the safety of the users of the park, the residents of the neighborhood and the residents of the project at 1 Hamilton.

The City needs to conduct a project level EIR for 1 Hamilton and allow public comment **prior** to changing the land use designation to residential and rezoning to 50 units. To do otherwise, is irresponsible and fails to meet the City's obligations under CEQA.

Thank you for the opportunity to submit public comments re the City of Mill Valley's Notice of Preparation for the General Plan Housing and Land Use Update and Zoning Amendments.

Paula Weaver McGrath

MILL VALLEY

Errata to Notice of Preparation

To: Interested Parties

Date: September 15, 2022

Subject: Errata to the Notice of Preparation (NOP) of Draft Subsequent Environmental Impact Report City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments

Lead Agency: City of Mill Valley

NOTICE IS HEREBY GIVEN THAT the City of Mill Valley will be the Lead Agency under the California Environmental Quality Act (CEQA) and will prepare a Draft Subsequent Environmental Impact Report (DSEIR) for the proposed project. This NOP includes a project description and an overview of the potential impacts that will be addressed in the DSEIR.

Project Title: City of Mill Valley 2023-2031 General Plan Housing and Land Use Element Update and Zoning Amendments

Project Applicant: City of Mill Valley

Project Location: City of Mill Valley

The project description, location map, and the potential environmental effects are contained in the attached document.

The purpose of this notice is: to provide clarifications and minor edits to the Notice of Preparation dated July 20, 2022 and to incorporate public comments received during the 30-day public comment period (July 21, 2022 through August 22, 2022).

A copy of the errata to the NOP and attachment is on the City's website (https://www.cityofmillvalley.org/housingelement) and is on file at the City Hall offices, located at the address provided below.

Danielle L. Staude, Senior Planner
Building & Planning Department
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

September15, 2022
Date

Danielle L. Staude, Senior Planner

City of Mill Valley
2023-2031 Housing and Land Use Elements Updates and Zoning Amendments
Notice of Preparation

Revised September 15, 2022

The information below has been revised to correct errors in the original Notice of Preparation (NOP) and to incorporate public comments received during the 30-day NOP public comment period (July 21, 2022 through August 22, 2022). Clarifications and minor editions are highlighted in track changes through ~~strike out~~ and underlined format.

2023-2031 Housing Element Update Overview

The City of Mill Valley (City) is updating its Housing Element in order update the City's housing policies and programs through 2031 and to accommodate the Regional Housing Needs Allocation (RHNA) for the City as determined by the California Department of Housing and Development and the Association of Bay Area Governments. The Housing Element update also requires amendments to the General Plan Land Use Element, as well as the Mill Valley Municipal Code (MVMC), including the Zoning Ordinance (MVMC, Title 20).

Setting/Project Location

The City of Mill Valley is bounded on the east by U.S. Highway 101 and the unincorporated neighborhoods of Strawberry and Alto; on the north by the cities of Corte Madera and Larkspur; on the west by Mount Tamalpais; and on the south by the unincorporated neighborhoods of Homestead and Almonte, and Richardson Bay. Mill Valley and its relationship to surrounding cities and communities are illustrated in Figure 1, Regional Map.

Mill Valley is surrounded by the hillsides and steep ridges of the coastal mountains and the water of Richardson Bay, which form natural edges to urban growth. Many of the ridgelines that create the dominant visual backdrop for the community are now preserved as permanent open space. Much of the bayfront land has been preserved as park and open space, providing important habitat as well as visual and physical access to Richardson Bay and the greater San Francisco Bay beyond. Creeks, marshes, redwood groves, heavily forested and grass-covered hillsides, and chaparral are commonplace. Single-family residential neighborhoods are located in the valleys and on the hillsides, with commercial and more intensive residential uses clustered on the flat low lands, in close proximity to transit and along the main arterial roadways. The residential and commercial areas, together with the natural setting, create a small-town community character that is cherished by the area's residents (City of Mill Valley 2013).

General Plan Elements to be Amended

Housing Element

State law requires the City to have and maintain a general plan with specific contents in order to provide a vision for the City's future, and inform local decisions about land use and development, including issues such as circulation, conservation, and safety. The Housing Element is one of the state-mandated elements of the General Plan. State law specifically requires the City to update the Housing Element of its General Plan by January 15, 2023, while making any changes to other elements of the General Plan needed to maintain internal consistency and undertaking any related changes to the City's Municipal Code (including the City's Zoning Ordinance). The City's Housing Element for the 2015-2023 planning period was adopted in May 2015. In accordance with State law, the eight-year planning period for the updated Housing Element will extend from 2023 to 2031; this is also referred to as the 6th Cycle Housing Element Update. The City is updating its Housing Element to comply with the requirements of State law by analyzing existing and projected housing needs, and updating goals, policies, objectives, and implementation programs for the preservation, improvement, and development of housing for all income categories.

Regional Housing Needs Allocation (RHNA)

The Housing Element Update addresses any changes that have occurred since adoption of the current (2015-2023) Housing Element. These changes include, among others, updated demographic information, housing needs data, and analysis of the availability of housing sites. The Housing Element map of available housing sites is updated to identify sites that could accommodate the City's Regional Housing Needs Allocation (RHNA) for the 2023-2031 planning period. The final RHNA allocation, broken down by income level, for the City is shown below in Table 1, Mill Valley 2023-2031 Final RHNA Allocation.

Table 1 Mill Valley 2023-2031 Final RHNA Allocation

Income Level	Units
Very Low Income (Less than 50 percent of Area Median Income)	262
Low Income (50 to 80 percent of Area Median Income)	151
Moderate Income (80 to 120 percent of Area Median Income)	126
Above Moderate Income (Above 120 percent of Area Median Income)	326
Total RHNA Allocation	865

SOURCE: ABAG 2021

Community Outreach

Over the last nine months, the City has held four public workshops, conducted two public surveys, held a series of focus group meetings and tabling events, and held several City Council, Planning Commission, and Housing Advisory Committee Meeting debriefs as reflected in Table 2, Mill Valley Housing Element Update Outreach Events. One of the primary goals of the workshop series was to engage the community in a conversation that focused on identifying varying housing-related policy considerations and issues, and methodically developing Mill Valley's vision and planning framework for addressing regional and local housing needs, and meeting the State-mandated RHNA.

Table 2 Mill Valley Housing Element Update Outreach Events

Type of Outreach	Date	Targeted Outreach/Action	Summary of Outreach
City Council Debrief (in person)	September 1, 2021	Review and approval of Draft Schedule and Outreach Plan	Project Kick-Off: Discuss the proposed Work Plan, including schedule and public outreach for the Housing Element Update.
Survey #1 (online)	September-October 2021	Inform and gather input	Online survey (118 responses) regarding housing needs, goals and interests from the community.
Workshop #1 (online)	September 23, 2021	Inform, listen and gather input	City staff reviewed Housing Element Update requirements and overall process, discussed housing trends and demographics, and reviewed existing housing goals (38 individuals registered).
City Council Debrief (in person)	October 10, 2021	Inform and review comments	Review housing needs and input from the community, including workshop 1 and online survey.
Workshop #2 (online)	November 10, 2021	Inform, listen, and gather input	This workshop focused on the sites analysis. The workshop provided an overview of the requirements for a sites analysis, the overall process and criteria used to evaluate and identify potential locations or sites to accommodate new housing. (64 individuals registered).

Type of Outreach	Date	Targeted Outreach/Action	Summary of Outreach
Survey #2 (online and paper copies available)	January-February 2022	Inform and gather input	Online survey (1,039 responses) regarding strategies for identifying sites and housing programs of interest.
City Council Debrief (in person)	February 7, 2022	Inform and review comments	Review of Workshop 2 and preliminary responses from online survey #2.
Focus Group Meetings and Tabling (online and in person)	January-March 2022	Inform, listen, and gather input	Focus groups to discuss: housing needs; strategies to address RHNA and developing housing programs, including: Mill Valley School District (January 12, 2022); Farmers Market (February 9, 2022); Housing Advocates, including Mill Valley Affordable Housing Committee, Mill Valley Force for Racial Equity and Empowerment and Mount Tam Community Land Trust (February 10, 2022).
Workshop #3 (online)	February 16, 2022	Inform, listen and gather input	City staff reviewed a series of draft scenarios to develop its sites inventory to achieve the City's RHNA allocation (175 individuals registered).
Joint City Council/Planning Commission Meeting (in person)	March 22, 2022	Comment and advise	Joint study session to review the proposed housing strategies and draft sites inventory list to achieve the City's RHNA allocation.
Workshop #4 (online)	April 28, 2022	Inform, listen, and gather input	City staff reviewed existing housing programs and provided an opportunity to discuss new housing policies and programs to address community interests (64 individuals registered).
Housing Advisory Committee Meeting (online)	May 17, 2022	Review, comment, and advise	Review of feedback from Workshop 4 and Draft Chapter 2, Housing Programs (48 individuals registered).

SOURCE: City of Mill Valley 2022

Sites Inventory

The Housing Element Update will identify specific sites appropriate for the development of multifamily housing (including affordable units), and the City would rezone those sites as necessary to meet the requirements of State law. The preliminary sites inventory list of existing and proposed sites that can accommodate development of multifamily housing includes sites that are located throughout Mill Valley, and is subject to refinement based on additional public input and review of the draft Housing Element by City's Planning Commission and City Council, and the California Department of Housing and Community Development. A summary of the maximum development potential for all sites is included below in Table 3, Sites Inventory Summary. Locations of the potential housing sites are shown on Figure 2, Sites Inventory Map.

Table 3 Sites Inventory Summary

Type of Site	Number of Sites	Number of Units (Anticipated Based on Existing Use without Rezoning)	Number of Units (Maximum Based on Allowable Density After Rezoning)
Vacant Single-Family Zoned Sites	88	88	88
Projected SB 9 Lot Splits	9 ~~10~~	36 ~~40~~	~~40~~ 36
City-Owned Site (1 Hamilton)	1	0 ~~40~~	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites under ½ acre with Housing Overlay[1]	33 ~~35~~	138 ~~149~~	294 ~~328~~
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay[1]	27	258	492
Office Conversions with Housing Overlay	13	65	173
Totals	171 ~~174~~	585 ~~640~~	1,133 ~~1,171~~

SOURCE: City of Mill Valley 2022

NOTE: 1. The City anticipates no change in the existing commercial square footage on each of the opportunity sites with existing commercial uses.

In addition to the Sites Inventory, the City anticipates an additional 160 Accessory Dwelling Units (ADUs) based on the City's 4-year trend of issuing over 20 new ADU building permits a year. Additional units are also anticipated based on three overlay districts proposed and the rezoning of 300 East Blithedale and the Presidio Neighborhood. See details below.

Land Use Element

The Land Use Element will be amended to redesignate land use designations on the Land Use Map and Land Use Categories Table contained in the General Plan based on proposed rezoning for the parcels and areas discussed below.

Amendments to Land Use/Zoning

The proposed project includes amending the general plan land use designations and redesignating the zoning district for several parcels in Mill Valley in order to create consistent land use and zoning designations and accommodate the City's RHNA allocation. The sites identified by City staff requiring amendments to land use designations and zoning amendments include the following locations as reflected in Figure 2, Sites Inventory and Figure 3, 300 East Blithedale Ave and Presidio Neighborhood.

1 Hamilton Drive

Mill Valley City Council has declared the northern portion of 1 Hamilton Drive (030-250-01) as "exempt surplus land" for the sole purpose of building affordable rental housing on the site. The 1 Hamilton parcel is approximately 11 acres in size and is zoned Open Area (O-A) with a land use designation of Community Facility (C-F) containing the Bayfront and Hauke Park, Public Safety Building (PSB), Hauke Park and PSB parking lots, electric vehicle charging stations, ground-mounted solar panels, and community garden. The surplus land is identified as the northern portion of 1 Hamilton ("the site") and is approximately 1.6 - 1.73 acres in size, pending additional survey, topographical and preliminary site planning required to determine the feasibility of relocating existing facilities that are on the site. In order to build affordable housing on the site, a separate parcel will be created with rezoning and land use amendments required. Zoning and land use amendments are assumed to be similar as those multi-family residences in the surrounding area, which are zoned Multi-Family Residential Bayfront (RM-B) with a land use designation of Multi-family (MFR-2) allowing up to 29 units/acre.

300 East Blithedale Avenue

The 0.5-acre site, located at 300 East Blithedale Avenue, is currently operating as a server building for Comcast inside an existing building. The parcel is currently zoned for single-family use. Amending the General Plan designation and rezoning the property to multi-family would result in a maximum of eight units. Table 4, 300 East Blithedale Existing and Proposed Conditions, presents a breakdown of existing and proposed land use and zoning conditions at the site.

Table 4 300 East Blithedale Existing and Proposed Conditions

	Existing	Proposed
General Plan Land Use Designation	Single Family Residential (SFR-2)	Multi-Family Residential (MFR-1)
Zoning District	Single-Family Residential, minimum lot size of 6,000 square feet (RS-6)	Multi-Family Residential Parkway (RM-P)
Density Range	One (1) dwelling units per acre to seven (7) dwelling units per acre	Nine (9) dwelling units per acre to 15 dwelling units per acre
Total Units (excluding Accessory Dwelling Units permitted by-right under State law)	0	8

SOURCE: City of Mill Valley 2022

Presidio Neighborhood (Properties Currently Zoned RM-3.5)

Currently the Presidio neighborhood, located in close proximity to Downtown between Forrest Street and Millwood Street, consist of 64 parcels in which the Single-Family land use designation in the General Plan does not align with the RM-3.5 zoning designation. As part of the Housing Element Update, the land use and zoning for these properties will be updated to ensure General Plan and zoning consistency. The General Plan land use designation for these properties will be amended from Single Family to "Downtown Residential" and the "RM 3.5" zoning will be modified to "Downtown Residential" with maximum densities increasing from ~~remaining at~~ 15 units/acre to 16 units/acre. Table 5, Presidio Neighborhood Existing and Proposed Conditions, presents a breakdown of existing and proposed land use and zoning conditions at the site.

Table 5 Presidio Neighborhood Existing and Proposed Conditions

	Existing	Proposed
General Plan Land Use Designation	Single Family Residential (SFR-2)	~~Multi-Family((MFR-1~~ Downtown Residential-(DR-1)
Zoning District	Multi-family Residential minimum lot 3,500 square feet (RM-3.5)	Downtown Residential (DR)
Density Range	Per SFR 2 Land Use: One (1) dwelling units per acre to seven (7) dwelling units per acre Per RM 3.5 Zoning: up to 15 units per acre	Nine (9) dwelling units per acre to 16~~15~~ dwelling units per acre
Units (excluding Accessory Dwelling Units or Duplexes permitted by-right under State Law)	94	15

SOURCE: City of Mill Valley 2022

In the Presidio Neighborhood, assessor data indicates one (1) parcel operating as commercial use; 22 parcels operating as multi-family use and 41 parcels operating as single-family use. Modification of the zoning designation to Downtown Residential allows all existing uses to remain, and permits the redevelopment and use of property as either single-family or multi-family. The average size parcel in this neighborhood is less than 5,000 square feet. Based on allowable densities ~~and assuming that all parcels convert to a multi-family use, an additional~~ 15 units could be added (excluding Accessory Dwelling and Duplex Units permitted by right under State Law).

Site Inventory Housing Overlays

To accommodate its regional housing numbers and to facilitate the development of housing in Mill Valley, the following three Overlay Zoning Districts and Zoning Map Update will be adopted in conjunction with the Housing Element Update process. As such, the following housing overlays will specifically apply to those properties identified on the City's Sites Inventory list under the categories of office conversion; underutilized "small lot" sites and opportunity sites.

- **Small Lot Housing Overlay:**

  The "small lot overlay zone" will apply to those parcels that are less than ½ acre as identified on the sites inventory list.

  The following modified standards apply to projects seeking to develop a parcel through this overlay district:

  1. reduced parking (1 space per unit for units less than 1,000 square feet);
  2. increased height up to 40-feet for buildings being raised to address the floodplain management requirements or to provide higher ceiling heights on the first floor of a mixed-use building;
  3. increased density up to 40 units/acre;
  ~~3.~~4. modified Floor Area as allowed under State Law (SB 478); and
  ~~4.~~5. exemption to the inclusionary housing requirement for those projects that provide units that are 1,000 square feet or less.

- **Opportunity Site Housing Overlay:** Those parcels identified on the sites inventory that are ½ acre or more may apply for the "opportunity site housing overlay" and Density Bonus as part of the redevelopment of the parcel, which will include the following modified standards:

  1. reduced parking (1 parking space for units less than 1,000 square feet);
  2. increased height up to 40' for buildings being raised to address the floodplain or to provide higher ceiling heights on the first floor of a mixed use building;
  3. revised density standards: minimum density of 20 units/acre and maximum density of 40 units/acre;
  4. full residential projects permitted;
  5. mixed use projects must have at least 50% of the floor area for residential uses;
  6. lot consolidation permitted to facilitate proposed development; ~~and~~

7. modified Floor Area as allowed under State Law (SB 478);

~~7.~~8. subject to inclusionary requirements, established in MVMC 20.80, with the following incentives: a) projects subject to the inclusionary regulations must include six or more new units, b) waiving the maximum micro-unit standards in MVMC 20.24.040(B)(1) for those projects that allocate 25% of the inclusionary units as low income, and 3) waiving one affordable inclusionary unit for projects that provide one three-bedroom unit as a low-income inclusionary unit; and

~~8.~~9. those redevelopment projects that designate 20% of the units as affordable to lower income households are subject to by-right ministerial approval by the Planning Director (not subject to a hearing or discretionary review) as required by state law.

- **Office Conversion Overlay:** The "office conversion overlay zone" will apply to those parcels identified on the sites inventory that currently utilize upper floor space as office space.

  The following modified standards apply to projects seeking to develop a parcel through this overlay district:

  1. grandfathering parking based on existing parking on site so long as the proposed units are 1,000 square feet or less and the footprint of the building is not expanded;
  2. modified density standard, up to 40 units/acre;
  3. exemption to the inclusionary housing requirement for those projects that provide units that are 1,000 square feet or less; and
  4. ministerial approval (no hearing) based on objective standards to streamline approval.

Other Zoning Code Amendments

Various amendments to code section addressing Commercial Zones (20.36 through 20.48), plus some changes under 20.66 Design Review.

- Modifications to Design Review, as discussed above;
- Removal of Conditional Use Permit for residential use in commercial zoned districts;
- Modification of Development Standards based on state law, including but not limited to State Density Bonus and creating objective standards and guidelines; and
- Modification of allowable uses and development standards based on state law, including but not limited to emergency shelters, residential care facilities and low barrier navigation centers.

Summary of Zoning Map and Land Use Amendments

The proposed project includes amending the Zoning Ordinance as referenced above. In doing so, as reflected in Table 6, Summary of Zoning Map and Land Use Amendments, the following amendments will be made to the Zoning Map and General Plan Land Use Map and Land Use Categories Table.

Table 6 Summary of Zoning Map and Land Use Amendments

Site/Location	Proposed Zoning Amendment	Proposed Land Use Map	Proposed Land Use Density Category
1 Hamilton Drive	Multi-Family Residential Bayfront (RM-B)	Multi-Family Residential (MFR-2)	17 dwelling units per acre to 29 dwelling units per acre
300 East Blithedale Avenue	Multi-Family Residential Parkway (RM-P)	Multi-Family Residential (MFR-1)	Nine (9) dwelling units per acre to 15 dwelling units per acre
Presidio Neighborhood (RM3.5 Zoning District)	Downtown Residential (DR)	Multi-Family Residential (MFR-1)	Nine (9) dwelling units per acre to 15 dwelling units per acre
Small Lot Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	17 dwelling units per acre to 40 dwelling units per acre
Office Conversion Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	17 dwelling units per acre to 40 dwelling units per acre
Opportunity Site Overlay Zoning District	Overlay district applied to sites identified Table 2 and Figure 2	Overlay district applied to sites identified Table 2 and Figure 2	20 dwelling units per acre to 40 dwelling units per acre

SOURCE: Mill Valley 2022

Subsequent EIR Approach

Consistent with CEQA Guidelines Section 15162, the EIR will provide subsequent environmental analysis to the 2013 *City of Mill Valley 2040 General Plan Certified Final EIR* (general plan EIR), updating existing analysis where appropriate, and presenting new analysis where necessary. This subsequent EIR will evaluate only the impacts resulting from the amendments to the general plan elements. The subsequent EIR will not evaluate total buildout of the amended General Plan.

CEQA Guidelines section 15146 states that, "The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." The underlying activity is adoption of the 2023-2031 Housing Element and associated general plan and zoning amendments. Therefore, the subsequent EIR will evaluate the environmental impacts of the 2023-2031 Housing Element to the greatest degree feasible; however, later environmental review in compliance with CEQA may be required when development proposals requiring discretionary action are proposed. Later projects may be able to "tier" off of this SEIR, meaning they can rely on the environmental analysis in this document to the extent applicable to their project, limiting environmental analysis to impacts not previously identified, or increases to impacts that were previously identified.

Probable Environmental Effects

Based on a review of the general plan EIR, the following environmental issues have been determined to be adequately addressed in the general plan EIR and will not be addressed further in the subsequent EIR:

- Agricultural and Forestry Resources;
- Cultural Resources (with the exception of Tribal Cultural Resources);
- Geology and Soils (including Paleontological Resources);
- Hazards and Hazardous Materials (with the exception of Sea Level Rise and Wildfire);
- Hydrology and Water Quality; and
- Mineral Resources.

Environmental effects to be addressed in the subsequent EIR will be based on a review of the environmental analysis contained in the general plan EIR and an understanding of current conditions in the city. Probable environmental effects associated with adoption of the 2023-2031 Housing Element and associated updates to the City's Land Use Element and Zoning Ordinance will be addressed in the subsequent EIR and are briefly discussed below.

Aesthetics

The aesthetics discussion and analysis in the general plan EIR will be utilized in this section, and updated where necessary to address the proposed project. For example, the project may include increasing the allowed heights of buildings. This section will address both project-level and cumulative visual resource impacts.

Air Quality

This section of the subsequent EIR will reflect current air quality analyses, as well as current federal, state, regional, and local regulations. The proposed project could result in an increase in operational criteria air emissions through new vehicle trips generated by additional housing. The proposed project may also increase community health risks and hazards by placing sensitive receptors near existing or planned sources of toxic air contaminants (TACs) or other hazardous emissions.

Biological Resources

The biological resources section of the subsequent EIR will utilize the California Natural Diversity Database (CNDDB) to determine whether there have been any status changes to special status plant and wildlife species, and whether the general plan EIR adequately addresses sensitive biological resources to current standards.

Energy

The proposed project is presumed to create new development capacity that would result in increased energy demand. The three primary sources of energy demand would likely be fuel use in vehicles, and electricity and natural gas use in buildings. The net change in demand for these types of energy will be modeled in CalEEMod and EMFAC. Because the threshold of significance for energy impacts is qualitative, the impact discussion and analysis will also be qualitative.

Greenhouse Gas Emissions

The City is anticipating that it will adopt and updated climate action plan (CAP) in the summer of 2022. The forthcoming update to the City's will include GHG emission projections that incorporate the new residential development capacity enabled by the Housing Element Update. Consequently, the Housing Element would be consistent with the CAP and GHG reduction measures included in the CAP would be applicable to that new residential development. Consequently, the GHG impact analysis can be streamlined pursuant to CEQA Guidelines section 15183.5. The Housing Element Update GHG impact would be less than significant provided each new future individual project made possible is conditioned to implement applicable GHG reduction measures found in the updated CAP.

In addition, this section of the subsequent EIR will address potential impacts associated with sea level rise. CEQA does not require the evaluation of the environment's impact on a project, but does require an analysis if a project contributes to an environmental effect that could have an effect on a project. The general plan EIR and updated CAP address sea level rise. Existing documentation will be used in this section of the subsequent EIR to present the anticipated flooding impacts of sea level rise, and a qualitative discussion as to how the project could exacerbate these flooding issues.

Noise

This section will address whether the proposed project would result in an increase in the noise levels identified in the general plan EIR with implementation of the proposed project. Cumulative project impacts will be discussed.

Public Services

This section will address whether the proposed project would require new or expanded public services facilities, and whether those facilities would result in significant environmental impacts.

Public services to be addressed include fire protection and emergency medical services, law enforcement, public schools and recreation facilities. Cumulative project impacts will be discussed.

Transportation

The transportation section of the subsequent EIR will address the vehicle miles traveled (VMT) impacts of the project. VMT was not a required component of a CEQA transportation impact analysis when the general plan EIR was prepared.

Tribal Cultural Resources

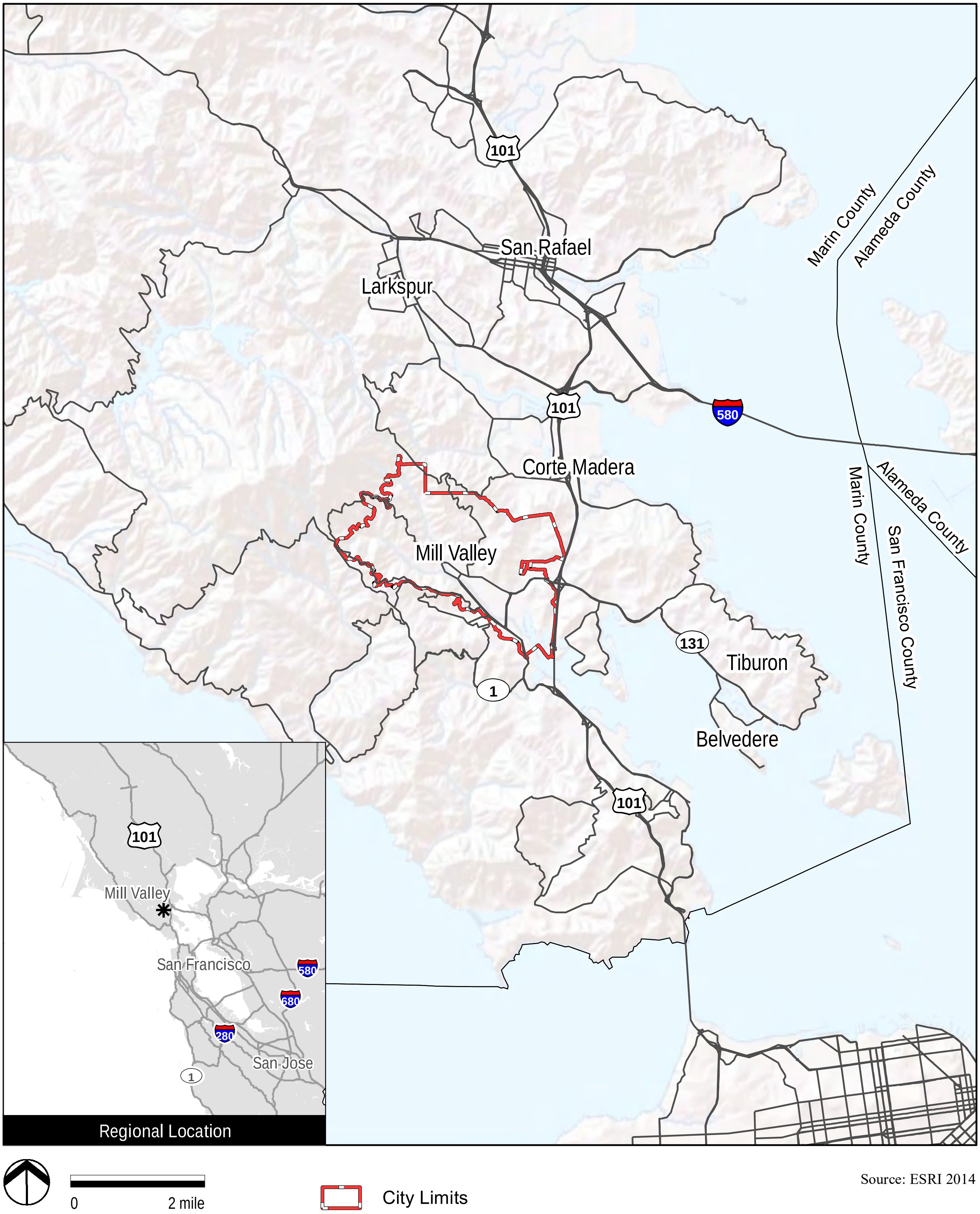
This section of the subsequent EIR will report on the City's SB 18 and AB 52 Tribal Consultation process, which was not a required component of the CEQA cultural resources impact analysis when the general plan EIR was prepared. If consultation does occur, this section will address whether the proposed project may have an adverse change on the significance of a tribal cultural resource.

Utilities and Service Systems

This section will address possible physical changes associated with expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, sufficient water supplies, waste water treatment capacity, and solid waste. Various agencies will be consulted including City of Mill Valley, Marin Municipal Water District, Sewerage Agency of Southern Marin, PG&E, Mill Valley Refuse Service, and the Redwood Landfill. Cumulative project impacts will be discussed.

Wildfire

This section of the subsequent EIR will address whether the project would substantially impair an adopted emergency response plan or emergency evacuation plan; expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; require installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or expose people or structures to significant risks, including downslope of downstream flooding or landslides as a result of runoff, postfire slope instability, or drainage changes. Cumulative project impacts associated with wildfire hazards will also be discussed.



Source: ESRI 2014

Figure 1

Regional Map

City of Mill Valley 2023-2031 Housing and Land Use Element Update and Zoning Amendments NOP

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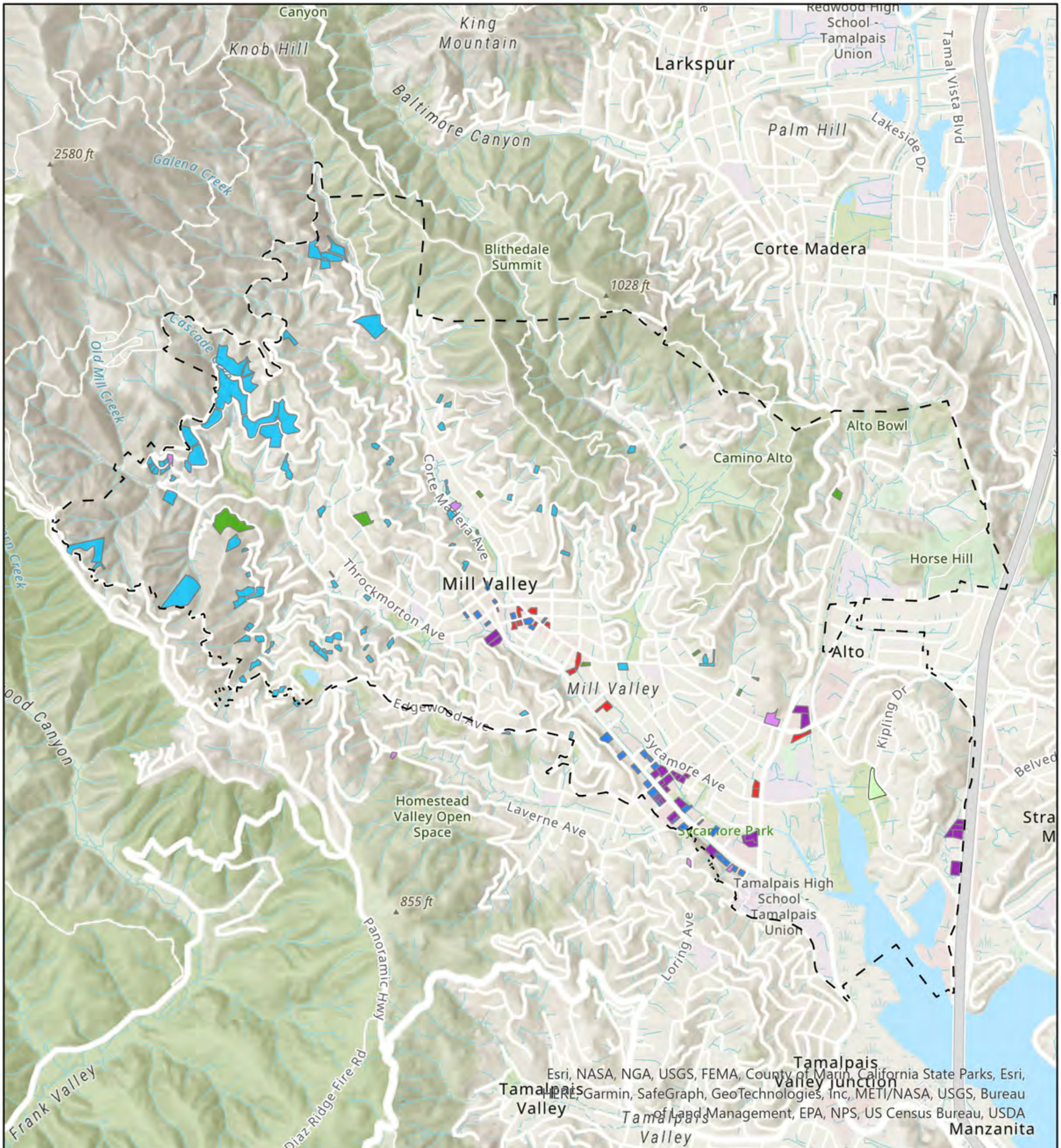

Table A

Site Category

- City-Owned Site
- Pipeline Projects
- Vacant SF (Not SB9)
- Vacant SF (SB9)

Table B

Site Category

- Office Conversion
- Opportunity Sites (>0.5 acre)
- Underutilized Sites (<0.5 acres)
- City Boundary

N

0 0.5 1

Miles

Figure 2

City of Mill Valley

Site Inventory

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0 350 feet

300 E. Blithedale Ave.

Presidio Neighborhood

Source: Marin County GIS 2022, Google Earth 2022

Figure 3

300 East Blithedale Ave and Presidio Neighborhood

City of Mill Valley 2023-2031 Housing and
Land Use Element Update and Zoning Amendments NOP

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Housing Sites List

B

APPENDIX

Mill Valley Housing Element Update 2023-2031, Housing Units Summary

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
Sites Inventory									
Publicly Owned Sites									
1	1 Hamilton Drive	1.7 (approx.)	OS (Open Space)	Undeveloped parking lot	O-A (Open Area)	0	Up to 29 units per acre	100% Affordable deed restricted housing	50 (approx.)
1 site	*Publicly Owned Sites Subtotal*	*1.7 (approx.)*				*0*			*50 (approx.)*
Small Lot/ "Underutilized Sites": Commercial and Multi-Family Zoned Sites under 0.5 Acres									
2	10 Willow Street	0.33	CN (Neighborhood Commercial)	Office building	C-N (17 to 29 units per acre for mixed use development with residential)	7	Up to 40 units per acre	Mixed-Use	13
3	124-130 Throckmorton	0.30	CD (Downtown Commercial)	Citibank	C-D (17 to 29 units per acre for mixed use	6	Up to 40 units per acre	Mixed-Use	12

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					development with residential)				
4	15 Locust	0.11	CN (Neighborhood Commercial)	Latitude 38 (Magazine Office)	C-N (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	4
5	19 Sunnyside	0.22	CD (Downtown Commercial)	Bank of Marin	C-D (17 to 29 units per acre for mixed use development with residential)	4	Up to 40 units per acre	Mixed-Use	9
6	340 Miller	0.15	CN (Neighborhood Commercial)	Chevron Gas Station	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use	6
7	35 Corte Madera	0.21	CD (Downtown Commercial)	Office building	C-D (17 to 29 units per acre for	4	Up to 40 units per acre	Mixed-Use	8

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					mixed use development with residential)				
8	270 Miller	0.60	MFR 1 (Multi-Family Residential -1)	Guidepost Montessori (school)	RM-P (8 to 15 units per acre)	5	Up to 40 units per acre	Multi-family	24
9	310 Miller	0.35	MFR 2 (Multi-Family Residential – 2)	Hair & Joy (beauty salon)	RM-P (17 to 29 units per acre)	7	Up to 40 units per acre	Multi-Family	14
10	338 Miller	0.17	CN (Neighborhood Commercial)	Tamalpais Paint & Color (paint store)	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use	7
11	374 Miller	0.29	CN (Neighborhood Commercial)	Jiffy Lube (for sale)	C-N (17 to 29 units per acre for mixed use development with residential)	6	Up to 40 units per acre	Mixed-Use	12

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
12	380-384 Miller/ 9 Montford	0.45	CN (Neighborhood Commercial)	2AM Club, Joe's Taco Lounge, back building (car repair) (vacant) (for sale)	C-N (17 to 29 units per acre for mixed use development with residential)	7	Up to 40 units per acre	Mixed-Use	18
13	390 Miller	0.15	CN (Neighborhood Commercial)	Buddhist Temple (minimal operation, less than a church)	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use	6
14	433 Miller	0.40	CN (Neighborhood Commercial)	Upper Cervical Chiropractic	C-N (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use	16
15	438 Miller	0.17	CN (Neighborhood Commercial)	Red Dragon Yoga	C-N (17 to 29 units per acre for mixed use development	4	Up to 40 units per acre	Mixed-Use	7

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					with residential)				
16	458 Miller	0.31	CN (Neighborhood Commercial)	Gas Station and adjacent lot	C-N (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use	12
17	465 Miller	0.10	CN (Neighborhood Commercial)	Café of Life Chiropractic Center	C-N (17 to 29 units per acre for mixed use development with residential)	1	Up to 40 units per acre	Mixed-Use	4
18	493 Miller	0.40	CN (Neighborhood Commercial)	Grilly's Mexican Restaurant/Malugani Tire	C-N (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use	16
19	524 Miller	0.11	CN (Neighborhood Commercial)	Symmetry of Movement (yoga studio)	C-N (17 to 29 units per acre for mixed use	2	Up to 40 units per acre	Mixed-Use	4

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					development with residential)				
20	530 Miller	0.29	CN (Neighborhood Commercial)	PH Studio (graphic design office)	C-N (17 to 29 units per acre for mixed use development with residential)	5	Up to 40 units per acre	Mixed-Use	12
21	546 Miller	0.31	CN (Neighborhood Commercial)	Pet Clinic	C-N (17 to 29 units per acre for mixed use development with residential)	6	Up to 40 units per acre	Mixed-Use	12
22	554 Miller	0.19	CN (Neighborhood Commercial)	LifeWorks Learning Center (tutoring office)	C-N (17 to 29 units per acre for mixed use development with residential)	4	Up to 40 units per acre	Mixed-Use	8
23	600 Miller	0.25	CN (Neighborhood Commercial)	Mt. Tam Sport and Spine (chiropractor office)	C-N (17 to 29 units per acre for	5	Up to 40 units per acre	Mixed-Use	10

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					mixed use development with residential)				
24	64 East Blithedale	0.40	CD (Downtown Commercial)	West America Bank	C-D (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use	16
25	71 Throckmorton	0.04	CD (Downtown Commercial)	U.S. Bank (for sale and vacant)	C-D (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	2
26	60 Throckmorton	0.12	CD (Downtown Commercial)	Bank of America (for sale and vacant)	C-D (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	5

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
27	19 Madrona	0.15	CD (Downtown Commercial)	Private parking lot	C-D (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use	6
28	No Site Address (APN: 028-212-10)	0.08	CN (Neighborhood Commercial)	Private parking lot for 14 Locust	C-N (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	3
29	No Site Address (APN: 028-211-06)	0.08	CN (Neighborhood Commercial)	Private parking lot for 21 Locust	C-N (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	3
30	No Site Address (APN: 0030-073-09)	0.08	CN (Neighborhood Commercial)	Private parking lot for 458 Miller	C-N (17 to 29 units per acre for mixed use development	2	Up to 40 units per acre	Mixed-Use	3

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					with residential)				
31	12 Evergreen	0.13	CN (Neighborhood Commercial)	Single Family home	C-N (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	5
32	91 E Blithedale	0.11	CD (Downtown Commercial)	Office	C-D (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use	4
33	39 Forrest	0.18	CD (Downtown Commercial)	Private parking lot	C-D (17 to 29 units per acre for mixed use development with residential)	4	Up to 40 units per acre	Mixed-Use	7
34	18 Miller	0.14	CD (Downtown Commercial)	Wells Fargo Bank (for sale and vacant)	C-D (17 to 29 units per acre for mixed use	3	Up to 40 units per acre	Mixed-Use	6

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					development with residential)				
33 sites	*Underutilized Sites Subtotal*	*7.37*				*138*			*294*
"Opportunity Sites": Underutilized Commercial Sites 0.5 Acres or More									
35	430 Miller	0.52	CN (Neighborhood Commercial)	Super Duper Burger	C-N (17 to 29 units per acre for mixed use development with residential)	11	Up to 40 units per acre	Mixed-Use or full residential	21
36	765 Redwood Highway	0.37	CG (General Commercial)	Goodman's Lumber (combined lots)	C-G (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use or full residential	10
37	775 Redwood Highway	0.53	CG (General Commercial)	Food and Stuff – Goodman (combined lots)	C-G (17 to 29 units per acre for mixed use development	11	Up to 40 units per acre	Mixed-Use or full residential	21

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					with residential)				
38	777 Redwood Highway	0.34	CG (General Commercial)	Goodman Building Supply (combined lots)	C-G (17 to 29 units per acre for mixed use development with residential)	7	Up to 40 units per acre	Mixed-Use or full residential	14
39	No Site Address (APN: 030-222-07)	0.69	CG (General Commercial)	Goodman Building Supply (combined lots)	C-G (17 to 29 units per acre for mixed use development with residential)	14	Up to 40 units per acre	Mixed-Use or full residential	28
40	61 Camino Alto	0.79	CG (General Commercial)	Behind Starbucks buildings, adjacent to Safeway (reduced vacancy)	C-G (17 to 29 units per acre for mixed use development with residential)	16	Up to 40 units per acre	Mixed-Use or full residential	32
41	45 Camino Alto	0.70	CG (General Commercial)	Starbucks building, adjacent to Safeway	C-G (17 to 29 units per acre for mixed use	14	Up to 40 units per acre	Mixed-Use or full residential	28

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					development with residential)				
42	250 Camino Alto	0.81	CG (General Commercial)	Office Center/Building	C-G (17 to 29 units per acre for mixed use development with residential)	17	Up to 40 units per acre	Mixed-Use or full residential	32
43	653 E Blithedale	0.88	CG (General Commercial)	Urban Farmer Store/Sloat (garden center)	C-G (17 to 29 units per acre for mixed use development with residential)	18	Up to 40 units per acre	Mixed-Use or full residential	35
44	16 La Goma	0.67	CN (Neighborhood Commercial)	Jolly King Liquor Store/Shapiro (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	14	Up to 40 units per acre	Mixed-Use or full residential	27
45	401 Miller	0.23	CN (Neighborhood Commercial)	Eggar Plaza/Sloat Garden Center (combined lots)	C-N (17 to 29 units per acre for	5	Up to 40 units per acre	Mixed-Use or full residential	9

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					mixed use development with residential)				
46	707 Redwood Highway	1.03	CG (General Commercial)	Travelodge Hotel	C-G (17 to 29 units per acre for mixed use development with residential)	21	Up to 40 units per acre	Mixed-Use or full residential	41
47	392 Miller	0.15	CN (Neighborhood Commercial)	Private Parking Lot across from Whole Foods (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use or full residential	6
48	398 Miller	0.15	CN (Neighborhood Commercial)	Private Parking Lot across from Whole Foods (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use or full residential	6

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
49	400 Miller	0.14	CN (Neighborhood Commercial)	Private Parking Lot across from Whole Foods (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	3	Up to 40 units per acre	Mixed-Use or full residential	6
50	42 Miller	0.56	CD (Downtown Commercial)	Law Offices	C-D (17 to 29 units per acre for mixed use development with residential)	11	Up to 40 units per acre	Mixed-Use or full residential	22
51	363 Miller	0.39	CN (Neighborhood Commercial)	Tea Foundation/Office Building (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	8	Up to 40 units per acre	Mixed-Use or full residential	16
52	55 La Goma	0.60	CN (Neighborhood Commercial)	Tea Foundation/Office Building (combined lots)	C-N (17 to 29 units per acre for mixed use development	12	Up to 40 units per acre	Mixed-Use or full residential	24

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					with residential)				
53	413 Miller	0.60	CN (Neighborhood Commercial)	Trio Salon/Swirl Frozen Yogurt	C-N (17 to 29 units per acre for mixed use development with residential)	11	Up to 40 units per acre	Mixed-Use or full residential	24
54	510 Miller	0.66	CN (Neighborhood Commercial)	KFC/Taco Bell (vacant)	C-N (17 to 29 units per acre for mixed use development with residential)	13	Up to 40 units per acre	Mixed-Use or full residential	26
55	38 Miller	0.83	CD (Downtown Commercial)	Mill Creek Plaza (restaurants, shops and offices)	C-D (17 to 29 units per acre for mixed use development with residential)	17	Up to 40 units per acre	Mixed-Use or full residential	33
56	No Site Address (APN: 030-057-16)	0.16	SFR-2 (Single Family Residential 2)	Sloat Garden Center	RS-6	1	Up to 40 units per acre	Mixed-Use or full residential	5

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
57	No Site Address (APN: 030-071-01)	0.18	CN (Neighborhood Commercial)	Sloat Garden Center	C-N (17 to 29 units per acre for mixed use development with residential	4	Up to 40 units per acre	Mixed-Use or full residential	5
58	No Site Address (APN: 030-071-33)	0.18	CN (Neighborhood Commercial)	Owner Interest – same owner as 16 La Goma	C-N (17 to 29 units per acre for mixed use development with residential)	4	Up to 40 units per acre	Mixed-Use or full residential	5
59	No Site Address (APN: 030-071-37)	0.19	CN (Neighborhood Commercial)	Owner Interest – same owner as 16 La Goma	C-N (17 to 29 units per acre for mixed use development with residential)	4	Up to 40 units per acre	Mixed-Use or full residential	5
60	No Site Address (APN: 030-071-42)	0.29	CN (Neighborhood Commercial)	Eggar Plaza/Sloat Garden Center (combined lots)	C-N (17 to 29 units per acre for mixed use development	6	Up to 40 units per acre	Mixed-Use or full residential	8

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					with residential)				
61	10 Evergreen	0.15	CN (Neighborhood Commercial)	Private Parking Lot across from Whole Foods (combined lots)	C-N (17 to 29 units per acre for mixed use development with residential)	2	Up to 40 units per acre	Mixed-Use or full residential	3
27 sites	*Opportunity Sites Subtotal*	*12.79*				*258*			*492*
Office Conversion (Upper Floor)[2]									
62	103 E Blithedale Ave	0.17	CD (Downtown Commercial)	Office Building	C-D (17 to 29 units per acre for mixed use development with residential)	5	40 units per acre	Mixed-Use	7
63	125 Camino Alto	0.48	CL (Limited Commercial)	Camino Alto Vet Hospital	C-N (17 to 29 units per acre for mixed use development with residential)	8	40 units per acre	Mixed-Use	19

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
64	141 Camino Alto	0.34	CN (Neighborhood Commercial)	Office Building	C-L (Commercial Limited) (17 to 29 units per acre for mixed use development with residential)	3	40 units per acre	Mixed-Use	14
65	163 Miller Ave	0.31	MFR 1 (Multi-Family Residential-1)	Office in MFR Zone	RM-P (Residential Multi-Family – Parkway) (8 to 15 units per acre)	4	40 units per acre	Mixed-Use	12
66	20 Sunnyside Ave	0.26	CD (Downtown Commercial)	Office Building	C-D (17 to 29 units per acre for mixed use development with residential)	4	40 units per acre	Mixed-Use	10
67	225 Miller Ave	0.64	MFR 1 (Multi-Family Residential-1)	Office in MFR Zone	RM-P (Residential Multi-Family – Parkway)	3	40 units per acre	Mixed-Use	22

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					(8 to 15 units per acre)				
68	238 E Blithedale Ave	0.54	CN (Neighborhood Commercial)	Pharmaca	C-N (17 to 29 units per acre for mixed use development with residential)	10	40 units per acre	Mixed-Use	22
69	24 Sunnyside Ave	0.11	CD (Downtown Commercial)	Prabh Indian Restaurant	C-D (17 to 29 units per acre for mixed use development with residential)	4	40 units per acre	Mixed-Use	4
70	30 Sunnyside Ave	0.09	CD (Downtown Commercial)	Lower Office Space in SFR Building	C-D (17 to 29 units per acre for mixed use development with residential)	4	40 units per acre	Mixed-Use	4
71	55 Sunnyside Ave	0.38	CD (Downtown Commercial)	Old Post Office	C-D (17 to 29 units per acre for	3	40 units per acre	Mixed-Use	15

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
					mixed use development with residential)				
72	650 E Blithedale Ave	0.67	CG (General Commercial)	Dentist/Yoga Studio	C-G (17 to 29 units per acre for mixed use development with residential)	7	40 units per acre	Mixed-Use	27
73	78 E Blithedale Ave	0.12	CD (Downtown Commercial)	Sotheby's Realty ofifce	C-D (17 to 29 units per acre for mixed use development with residential)	3	40 units per acre	Mixed-Use	5
74	8 E Blithedale Ave	0.31	CD (Downtown Commercial)	Phyllis' Burgers Restaurant	C-D (17 to 29 units per acre for mixed use development with residential)	7	40 units per acre	Mixed-Use	12

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
13 sites	*Office Conversion Subtotal*	*4.42*				*65*			*173*
75-162 (88 Sites)	*Vacant Sites in Single-Family Zoning Districts*	*63.74*	*SFR-1 and SFR-2*	*Vacant*	*RS*	*88*[3]	*N/A*	*Single Family Residential*	*88*
163-170 (8 sites)	*Anticipated New Units Allowed under Senate Bill 9*	*6.66*	*SFR-1 and SFR-2*	*Vacant*	*RS*	*36*[3]	*N/A*	*Single Family Residential*	*36*
170 sites	*Sites Inventory Subtotal*	*96.68*				*585*			*1,133*
Other Rezoned Sites									
171 (1 site)	*300 E. Blithedale (RS-6 to Multi-Family Parkway)*	*0.50*	*SFR-2 (Single-Family Residential)*	*Comcast Server Building*	*RS-6 (Single-Family Residential, minimum lot size of 6,000 sq. ft.)*	*2*[3]	*9 units per acre to 15 units per acre*	*Multi-Family Residential Parkway (RM-P)*	*8*

Existing							Housing Element Update[1]		
Site Number	Address	Acreage	General Plan Land Use Designation	Existing Use	Existing Zoning (DU/Acre)	Anticipated Units[4] with Existing Density Standards	Proposed Maximum DU/Acre with Overlay Zone	Proposed Allowed Use	Maximum Units Permitted[5] with Overlay/Rezoning Based on New Density Standards
172-265 (94 sites)	*Presidio Neighborhood (RM-3.5 – Multi-Family to Downtown Residential)*	*7.27*	*SFR-2 (Single-Family Residential)*	*Residential homes*	*RM-3.5 (Multi-Family Residential minimum lot 3,5000 sq. ft.)*	*15*	*9 units per acre to 15 units per acre*	*Downtown Residential (DR)*	*15*
265 sites	Grand Totals	104.45				602			1,156

SOURCE: City of Mill Valley, March 22, 2022 PC/CC Agenda Packet; MarinMap 2022; City of Mill Valley staff

NOTE:

1. The City anticipates no change in the existing commercial square footage on each of the opportunity sites with existing commercial uses.
2. Assumes one unit per 1,000 square feet of upper commercial space.
3. Assumes one Single Family residential unit and one accessory dwelling unit per parcel.
4. "Anticipated units with overlay" represent the number of units anticipated with adaptive reuse, assuming that portions of the commercial buildings will remain for commercial use.
5. "Maximum units permitted" is a calculation of square footage X maximum allowable density.

CalEEMod Results

C

APPENDIX

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM
601 Abrego Street, Monterey, CA 93940
Tel: 831-649-1799 / Fax: 831-649-8399
www.emcplanning.com

To: Sally Rideout, Principal

From: Jacob Cisneros Planner

Cc: File

Date: September 27, 2022

Re: **Mill Valley Housing Element Update SEIR – Emissions Modeling Methodology, Assumptions, and Results**

PROJECT DESCRIPTION

This memorandum describes the methodology and assumptions used in the emissions modeling prepared for the 6th cycle update to the City of Mill Valley Housing Element. The City of Mill Valley (City) is updating its Housing Element consistent with the requirements under California State law. Part of the Housing Element update requires that the City identify adequate housing sites to accommodate its share of Regional Housing Needs Allocation (RHNA). The City of Mill Valley has identified 239 housing sites with a total capacity of 1,156 residential units for this purpose. This analysis quantifies operational criteria air pollutant and greenhouse gas (GHG) emissions that would be generated by the proposed change in land uses that would accommodate the RHNA.

SCOPE OF ASSESSMENT

This assessment identifies the methodology and assumptions used to estimate project emissions. using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the Bay Area Air Quality Management District (referred to as "district"). The model results will inform the discussions of air quality and GHG emissions effects of implementing the Housing Element as will be evaluated in the Subsequent Environmental Impact Report. Model results are attached to this assessment.

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies.

The CalEEMod platform allows calculations of operational criteria pollutant and GHG emissions from land use projects. The model also calculates indirect emissions from processes "downstream" of the proposed project such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

CalEEMod is capable of estimating changes in the carbon sequestration potential of a site based on changes in natural vegetation communities and the net number of new trees that would be planted as part of the project. To do so, the model calculates a one-time only loss in the carbon sequestration potential of the site that would result from changes in land use such as converting vegetation to built or paved surfaces, and can calculate the estimated change in the carbon sequestration potential that would result from planting new trees in an amount that is greater than the number of trees to be removed (net number of new trees). Landscaping information is not yet available in detail sufficient to estimate the change in carbon sequestration potential resulting from the change in the number of trees on the site.

METHODOLOGY

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of criteria air pollutant and GHG emissions from land use projects.

Data inputs to the model are based on proposed land uses, and their CalEEMod default land uses while utilizing the size metrics provided in Table 2-2 of the proposed Housing Element. Per air district guidance for plan-level analysis, construction emissions are not quantified. Analysis of project-level operational emissions of future individual development projects on the opportunity sites may be required as part of the associated future individual project application processes.

Proposed Emissions Sources

Proposed land use types and modeled CalEEMod default land use categories are presented in Table 1, Project Characteristics.

Table 1 Project Characteristics

Type of Site	Number of Sites	Number of Units (Anticipated Based on Existing Zoning)	Number of Units (Maximum Based on Allowable Density After Application of Housing Overlay or Rezoning)[3]
Sites Inventory Summary			
Vacant Single-Family Zoned Sites	88	88	88
Projected SB 9 Lot Splits	9	36	36
Publicly-Owned Site (1 Hamilton)	1	0	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites under ½ acre with Housing Overlay[1, 2]	33	138	294
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay[1, 2]	27	258	492
Office Conversions with Housing Overlay [1, 2]	13	65	173
Sites Inventory Subtotal	*171*	*585*	*1,133*
Rezoned Sites [4]			
300 E. Blithedale (RS-6 to RM-P)	2	2	8
Presidio Neighborhood (RM-3.5 to DR)	15	15	15
Rezoned Sites Subtotal	*17*	*17*	*23*
Grand Totals	188	602	1,156
CalEEMod Land Use Type			Single-Family Residential

SOURCE: City of Mill Valley 2022

NOTE:

1. No change in the existing commercial square footage assumed on each of the sites with existing commercial uses
2. Base zoning is not changing. An overlay district will be applied.
3. The "number of units" identified in this table is a conservative estimate of the number of units that will be built on these sites. In most instances the number indicated in this table will be larger than the number of units estimated for the purpose of meeting the City's Regional Housing Needs Assessment (RHNA) allocation. The number of units estimated for RHNA purposes takes into account site constraints, environmental constraints, and market trends to devise an estimate of the realistic number of units that will be built on-site. The number of units used for CEQA purposes takes into account maximum buildout to ensure that the City has analyzed potential environmental impacts adequately.
4. Base zoning would change from RS-6 to RM-P (300 E. Blithedale) and from RM-3.5 to DR (Presidio Neighborhood).

Proposed Unmitigated Emissions 2031 Scenario

The modeled date for buildout of all new proposed residential units (the "operational date") is 2031. The "unmitigated" emissions scenario provides an estimate of operational emissions that would be generated by the proposed land uses with assumed reductions from several regulatory measures with which future development must comply. These regulatory requirements are summarized below. Several are identified in the California Pollution Control Officers Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* as noted and are referenced here parenthetically. Compliance with the following regulations is assumed:

- New residential uses must have net zero electricity demand based on Title 24 Building Energy Efficiency Standards;
- State Model Water Efficient Landscape Ordinance (CAPCOA WUW-4);
- Landscaping equipment is set to electric only to reflect phasing out of gas-powered landscaping tools potentially by 2024 (AB 1346). It is assumed that these or similar requirements will be in effect at buildout (CAPCOA A-1); and
- Solid waste diversion of 75 percent is applied consistent with waste diversion targets identified in AB 341. It is assumed that these or similar requirements will be in effect at buildout (CAPCOA SW-1).

Assumptions

Unless otherwise noted, the CalEEMod data inputs are based on or derived from information provided in the proposed housing element. The following primary assumptions were made:

1. The proposed uses would be developed and operational in 2031.
2. Existing and proposed uses are connected to the municipal wastewater system.
3. Trip generation rates are adjusted based on information provided by the transportation engineer (Hexagon Transportation Consultants 2022).
4. Each air district (or county) assigns trip lengths for urban and rural settings, which are incorporated into the CalEEMod defaults. The model defaults were set to "urban" and the location parameters are based on the model defaults for Marin County.

Criteria Air Pollutants Results

Unmitigated operational criteria air pollutant emissions are summarized in Table 3, Operational Criteria Air Pollutant Emissions.

Table 3 Operational Criteria Air Pollutant Emissions

Emissions	Nitrogen Oxides (NO_X)	Sulfur Oxides (SO_2)	Suspended Particulate Matter (PM_{10})	$PM_{2.5}$	Carbon Monoxide (CO)
Unmitigated Annual [1,2]	6	<1	11	4	53

SOURCE: EMC Planning Group 2022
NOTES:
1. Results may vary due to rounding.
2. Expressed in tons per year.

GHG Emissions Results

The model results for unmitigated annual GHG emissions are attached to this memorandum. The proposed project would generate 11,007, metric tons of carbon dioxide equivalent (MT CO_2e). Unmitigated annual GHG emissions volume estimates are summarized in Table 4, Unmitigated Operational GHG Emissions.

Table 4 Unmitigated Operational GHG Emissions

Emissions Sources[1,2]	Proposed 2031
Area	207
Energy[3]	3,238
Mobile	6,707
Waste	698
Water[4]	156
Total	11,007

SOURCE: EMC Planning Group 2022
NOTES:
1. Results may vary due to rounding.
2. Expressed in MT CO_2e per year.

SOURCES

1. Breeze Software, a Division of Trinity Consultants. California Emissions Estimator (CalEEMod) Version 2020.4. May 2021. Available online at: http://www.aqmd.gov/caleemod/home
2. ----. 2021. *CalEEMod User's Guide (Version 2020.4)*. Available online at: http://www.aqmd.gov/caleemod/user's-guide
3. Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines*. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en
4. Hexagon Transportation Consultants. September 9, 2022. *Mill Valley Housing Element Update Transportation Analysis*.

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mill Valley Housing Element Update SEIR - Proposed

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1,156.00	Dwelling Unit	375.32	2,080,800.00	3306

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 8 year planning period

Land Use - Existing units provided by applicant

Vehicle Trips - Trip rate provided by Hexagon (2022)

Energy Use - residential low to mid rise elec from renewable sources

Water And Wastewater - No septic systems

Waste Mitigation - compliance with AB-341

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Area	16.6608	0.2480	18.4682	0.0209		1.4763	1.4763		1.4763	1.4763	146.9403	50.0994	197.0397	0.2910	8.4000e-003	206.8175
Energy	0.2406	2.0556	0.8747	0.0131		0.1662	0.1662		0.1662	0.1662	0.0000	3,216.0255	3,216.0255	0.1808	0.0600	3,238.4330
Mobile	3.5082	3.7794	33.6040	0.0715	9.1806	0.0459	9.2265	2.4530	0.0428	2.4958	0.0000	6,601.0723	6,601.0723	0.4193	0.3199	6,706.8867
Waste						0.0000	0.0000		0.0000	0.0000	281.8570	0.0000	281.8570	16.6573	0.0000	698.2888
Water						0.0000	0.0000		0.0000	0.0000	23.8949	53.0843	76.9793	2.4628	0.0590	156.1292
Total	**20.4095**	**6.0831**	**52.9470**	**0.1055**	**9.1806**	**1.6884**	**10.8690**	**2.4530**	**1.6853**	**4.1383**	**452.6922**	**9,920.2815**	**10,372.9738**	**20.0112**	**0.4473**	**11,006.5553**

4.0 Operational Detail - Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT
Single Family Housing	10,912.64	11,028.24	9883.80	24,902,595
Total	10,912.64	11,028.24	9,883.80	24,902,595

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

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.555274	0.059572	0.187289	0.120548	0.022031	0.005855	0.011319	0.007376	0.000945	0.000497	0.025792	0.000881	0.002622

5.0 Energy Detail

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					
Single Family Housing	4.46114e+007	0.2406	2.0556	0.8747	0.0131		0.1662	0.1662		0.1662	0.1662	0.0000	2,380.6319	2,380.6319	0.0456	0.0436	2,394.7789
Total		**0.2406**	**2.0556**	**0.8747**	**0.0131**		**0.1662**	**0.1662**		**0.1662**	**0.1662**	**0.0000**	**2,380.6319**	**2,380.6319**	**0.0456**	**0.0436**	**2,394.7789**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kWh/yr	MT/yr			
Single Family Housing	9.02896e+006	835.3935	0.1352	0.0164	843.6541
Total		**835.3935**	**0.1352**	**0.0164**	**843.6541**

6.0 Area Detail

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	1.4648					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.1266					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.8134	0.1493	9.9075	0.0204		1.4287	1.4287		1.4287	1.4287	146.9403	36.0786	183.0189	0.2776	8.4000e-003	192.4627
Landscaping	0.2561	0.0987	8.5608	4.5000e-004		0.0476	0.0476		0.0476	0.0476	0.0000	14.0209	14.0209	0.0134	0.0000	14.3549
Total	**16.6608**	**0.2480**	**18.4682**	**0.0209**		**1.4763**	**1.4763**		**1.4763**	**1.4763**	**146.9403**	**50.0995**	**197.0397**	**0.2910**	**8.4000e-003**	**206.8176**

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	75.3181 / 47.4831	76.9793	2.4628	0.0590	156.1292
Total		**76.9793**	**2.4628**	**0.0590**	**156.1292**

8.0 Waste Detail

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	347.13	70.4643	4.1643	0.0000	174.5722
Total		**70.4643**	**4.1643**	**0.0000**	**174.5722**

9.0 Operational Offroad

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mill Valley Housing Element Update SEIR - Proposed

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1,156.00	Dwelling Unit	375.32	2,080,800.00	3306

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 8 year planning period

Land Use - Existing units provided by applicant

Vehicle Trips - Trip rate provided by Hexagon (2022)

Energy Use - residential low to mid rise elec from renewable sources

Water And Wastewater - No septic systems

Waste Mitigation - compliance with AB-341

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1,253.3833	24.1632	1,644.4931	2.9229		219.6181	219.6181		219.6181	219.6181	23,557.3594	7,311.7265	30,869.0858	29.2912	1.6623	32,096.7317
Energy	1.3181	11.2637	4.7931	0.0719		0.9107	0.9107		0.9107	0.9107		14,379.1645	14,379.1645	0.2756	0.2636	14,464.6127
Mobile	22.1035	19.5898	186.8128	0.4230	53.6217	0.2580	53.8797	14.2833	0.2407	14.5240		43,050.6929	43,050.6929	2.4481	1.8858	43,673.8487
Total	**1,276.8049**	**55.0167**	**1,836.0989**	**3.4178**	**53.6217**	**220.7868**	**274.4084**	**14.2833**	**220.7694**	**235.0527**	**23,557.3594**	**64,741.5838**	**88,298.9432**	**32.0150**	**3.8117**	**90,235.1931**

4.0 Operational Detail - Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT
Single Family Housing	10,912.64	11,028.24	9883.80	24,902,595
Total	10,912.64	11,028.24	9,883.80	24,902,595

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
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Single Family Housing	0.555274	0.059572	0.187289	0.120548	0.022031	0.005855	0.011319	0.007376	0.000945	0.000497	0.025792	0.000881	0.002622

5.0 Energy Detail

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					
Single Family Housing	122223	1.3181	11.2637	4.7931	0.0719		0.9107	0.9107		0.9107	0.9107		14,379.1645	14,379.1645	0.2756	0.2636	14,464.6127
Total		**1.3181**	**11.2637**	**4.7931**	**0.0719**		**0.9107**	**0.9107**		**0.9107**	**0.9107**		**14,379.1645**	**14,379.1645**	**0.2756**	**0.2636**	**14,464.6127**

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					
Single Family Housing	122.223	1.3181	11.2637	4.7931	0.0719		0.9107	0.9107		0.9107	0.9107		14,379.1645	14,379.1645	0.2756	0.2636	14,464.6127
Total		**1.3181**	**11.2637**	**4.7931**	**0.0719**		**0.9107**	**0.9107**		**0.9107**	**0.9107**		**14,379.1645**	**14,379.1645**	**0.2756**	**0.2636**	**14,464.6127**

6.0 Area Detail

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	8.0261					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	44.5291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,197.9830	23.0667	1,549.3737	2.9179		219.0892	219.0892		219.0892	219.0892	23,557.3594	7,140.0000	30,697.3594	29.1276	1.6623	31,920.9149
Landscaping	2.8451	1.0966	95.1194	5.0400e-003		0.5289	0.5289		0.5289	0.5289		171.7265	171.7265	0.1636		175.8168
Total	**1,253.3833**	**24.1632**	**1,644.4931**	**2.9229**		**219.6181**	**219.6181**		**219.6181**	**219.6181**	**23,557.3594**	**7,311.7265**	**30,869.0858**	**29.2912**	**1.6623**	**32,096.7317**

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mill Valley Housing Element Update SEIR - Proposed

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1,156.00	Dwelling Unit	375.32	2,080,800.00	3306

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 8 year planning period

Land Use - Existing units provided by applicant

Vehicle Trips - Trip rate provided by Hexagon (2022)

Energy Use - residential low to mid rise elec from renewable sources

Water And Wastewater - No septic systems

Waste Mitigation - compliance with AB-341

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1,253.3833	24.1632	1,644.4931	2.9229		219.6181	219.6181		219.6181	219.6181	23,557.3594	7,311.7265	30,869.0858	29.2912	1.6623	32,096.7317
Energy	1.3181	11.2637	4.7931	0.0719		0.9107	0.9107		0.9107	0.9107		14,379.1645	14,379.1645	0.2756	0.2636	14,464.6127
Mobile	19.6297	22.4056	201.8076	0.3998	53.6217	0.2581	53.8798	14.2833	0.2408	14.5241		40,706.6256	40,706.6256	2.7355	2.0564	41,387.8313
Total	**1,274.3310**	**57.8325**	**1,851.0937**	**3.3946**	**53.6217**	**220.7869**	**274.4086**	**14.2833**	**220.7695**	**235.0529**	**23,557.3594**	**62,397.5165**	**85,954.8759**	**32.3023**	**3.9824**	**87,949.1756**

4.0 Operational Detail - Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT
Single Family Housing	10,912.64	11,028.24	9883.80	24,902,595
Total	10,912.64	11,028.24	9,883.80	24,902,595

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
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.555274	0.059572	0.187289	0.120548	0.022031	0.005855	0.011319	0.007376	0.000945	0.000497	0.025792	0.000881	0.002622

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

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					
Single Family Housing	122223	1.3181	11.2637	4.7931	0.0719		0.9107	0.9107		0.9107	0.9107		14,379.1645	14,379.1645	0.2756	0.2636	14,464.6127
Total		**1.3181**	**11.2637**	**4.7931**	**0.0719**		**0.9107**	**0.9107**		**0.9107**	**0.9107**		**14,379.1645**	**14,379.1645**	**0.2756**	**0.2636**	**14,464.6127**

6.0 Area Detail

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	8.0261					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	44.5291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Mill Valley Housing Element Update SEIR - Proposed - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hearth	1,197.9830	23.0667	1,549.3737	2.9179		219.0892	219.0892		219.0892	219.0892	23,557.3594	7,140.0000	30,697.3594	29.1276	1.6623	31,920.9149
Landscaping	2.8451	1.0966	95.1194	5.0400e-003		0.5289	0.5289		0.5289	0.5289		171.7265	171.7265	0.1636		175.8168
Total	**1,253.3833**	**24.1632**	**1,644.4931**	**2.9229**		**219.6181**	**219.6181**		**219.6181**	**219.6181**	**23,557.3594**	**7,311.7265**	**30,869.0858**	**29.2912**	**1.6623**	**32,096.7317**

EMFAC Results

D

APPENDIX

APPENDIX D
EMFAC2021
City of Mill Valley
Fuel Demand

2031 Fuel Demand

Vehicle Class	**Fuel**	**Process**	**Kgal/day**	**Fuel Type**	**Demand**
All Other Buses	Dsl	RUNEX	0.001134	Diesel	
LDA	Dsl	RUNEX	0.00119	Kgal/day	0.19
LDT1	Dsl	RUNEX	4.59E-07	Kgal/yr	69.76
LDT2	Dsl	RUNEX	0.001974		
LHD1	Dsl	IDLEX	0.000193	Gas	
LHD1	Dsl	RUNEX	0.035081	Kgal/day	1.61
LHD2	Dsl	IDLEX	0.000131	Kgal/yr	586.96
LHD2	Dsl	RUNEX	0.017834		
MDV	Dsl	RUNEX	0.004925	Hybrid	
MH	Dsl	RUNEX	0.001586	kgal/day	0.02
Motor Coach	Dsl	IDLEX	7.63E-05	Kgal/yr	7.21
Motor Coach	Dsl	RUNEX	0.00154		
PTO	Dsl	RUNEX	0.002286	TOTAL	
SBUS	Dsl	IDLEX	0.000133	Kgal/yr	663.93
SBUS	Dsl	RUNEX	0.001446	gal/yr	663931
T6 CAIRP Class 4	Dsl	IDLEX	6.00E-08		
T6 CAIRP Class 4	Dsl	RUNEX	7.56E-06		
T6 CAIRP Class 5	Dsl	IDLEX	7.73E-08		
T6 CAIRP Class 5	Dsl	RUNEX	1.05E-05	Mileage	
T6 CAIRP Class 6	Dsl	IDLEX	2.99E-07	Check:	
T6 CAIRP Class 6	Dsl	RUNEX	2.63E-05		
T6 CAIRP Class 7	Dsl	IDLEX	4.83E-07	VMT/yr	19157731
T6 CAIRP Class 7	Dsl	RUNEX	0.000165	mpg	28.86
T6 Instate Delivery Class 4	Dsl	IDLEX	0.000111		
T6 Instate Delivery Class 4	Dsl	RUNEX	0.002094		
T6 Instate Delivery Class 5	Dsl	IDLEX	7.24E-05		
T6 Instate Delivery Class 5	Dsl	RUNEX	0.001377		
T6 Instate Delivery Class 6	Dsl	IDLEX	0.00012		
T6 Instate Delivery Class 6	Dsl	RUNEX	0.002269		
T6 Instate Delivery Class 7	Dsl	IDLEX	7.52E-06		
T6 Instate Delivery Class 7	Dsl	RUNEX	0.000194		
T6 Instate Other Class 4	Dsl	IDLEX	0.000206		
T6 Instate Other Class 4	Dsl	RUNEX	0.00419		
T6 Instate Other Class 5	Dsl	IDLEX	0.000509		
T6 Instate Other Class 5	Dsl	RUNEX	0.010465		
T6 Instate Other Class 6	Dsl	IDLEX	0.000304		
T6 Instate Other Class 6	Dsl	RUNEX	0.006222		
T6 Instate Other Class 7	Dsl	IDLEX	0.000282		
T6 Instate Other Class 7	Dsl	RUNEX	0.00492		
T6 Instate Tractor Class 6	Dsl	IDLEX	2.70E-12		
T6 Instate Tractor Class 6	Dsl	RUNEX	4.99E-11		

APPENDIX D
EMFAC2021
City of Mill Valley
Fuel Demand

T6 Instate Tractor Class 7	Dsl	IDLEX	1.42E-05
T6 Instate Tractor Class 7	Dsl	RUNEX	0.000314
T6 OOS Class 4	Dsl	IDLEX	9.12E-08
T6 OOS Class 4	Dsl	RUNEX	1.17E-05
T6 OOS Class 5	Dsl	IDLEX	1.17E-07
T6 OOS Class 5	Dsl	RUNEX	1.61E-05
T6 OOS Class 6	Dsl	IDLEX	4.59E-07
T6 OOS Class 6	Dsl	RUNEX	4.11E-05
T6 OOS Class 7	Dsl	IDLEX	6.15E-07
T6 OOS Class 7	Dsl	RUNEX	0.000278
T6 Public Class 4	Dsl	IDLEX	5.19E-05
T6 Public Class 4	Dsl	RUNEX	0.000662
T6 Public Class 5	Dsl	IDLEX	0.000108
T6 Public Class 5	Dsl	RUNEX	0.001393
T6 Public Class 6	Dsl	IDLEX	7.79E-05
T6 Public Class 6	Dsl	RUNEX	0.001049
T6 Public Class 7	Dsl	IDLEX	0.000145
T6 Public Class 7	Dsl	RUNEX	0.00236
T6 Utility Class 5	Dsl	IDLEX	5.80E-06
T6 Utility Class 5	Dsl	RUNEX	0.000164
T6 Utility Class 6	Dsl	IDLEX	1.09E-06
T6 Utility Class 6	Dsl	RUNEX	3.08E-05
T6 Utility Class 7	Dsl	IDLEX	1.22E-06
T6 Utility Class 7	Dsl	RUNEX	4.18E-05
T7 CAIRP Class 8	Dsl	IDLEX	0.001013
T7 CAIRP Class 8	Dsl	RUNEX	0.012763
T7 NNOOS Class 8	Dsl	IDLEX	0.001152
T7 NNOOS Class 8	Dsl	RUNEX	0.016003
T7 NOOS Class 8	Dsl	IDLEX	0.000507
T7 NOOS Class 8	Dsl	RUNEX	0.00592
T7 Other Port Class 8	Dsl	IDLEX	3.23E-05
T7 Other Port Class 8	Dsl	RUNEX	0.001618
T7 POAK Class 8	Dsl	IDLEX	0.000218
T7 POAK Class 8	Dsl	RUNEX	0.00506
T7 POLA Class 8	Dsl	IDLEX	4.56E-12
T7 POLA Class 8	Dsl	RUNEX	1.42E-10
T7 Public Class 8	Dsl	IDLEX	0.000285
T7 Public Class 8	Dsl	RUNEX	0.006944
T7 Single Concrete/Transit Mix Class 8	Dsl	IDLEX	1.07E-05
T7 Single Concrete/Transit Mix Class 8	Dsl	RUNEX	0.000258
T7 Single Dump Class 8	Dsl	IDLEX	0.000222
T7 Single Dump Class 8	Dsl	RUNEX	0.004054
T7 Single Other Class 8	Dsl	IDLEX	0.000337
T7 Single Other Class 8	Dsl	RUNEX	0.004703

APPENDIX D
EMFAC2021
City of Mill Valley
Fuel Demand

T7 SWCV Class 8	Dsl	IDLEX	6.44E-05
T7 SWCV Class 8	Dsl	RUNEX	0.004433
T7 Tractor Class 8	Dsl	IDLEX	0.000994
T7 Tractor Class 8	Dsl	RUNEX	0.011748
T7 Utility Class 8	Dsl	IDLEX	4.87E-06
T7 Utility Class 8	Dsl	RUNEX	0.000223
UBUS	Dsl	RUNEX	0.002702
LDA	Gas	RUNEX	0.60099
LDA	Gas	STREX	0.020711
LDT1	Gas	RUNEX	0.0627
LDT1	Gas	STREX	0.0024
LDT2	Gas	RUNEX	0.465678
LDT2	Gas	STREX	0.016028
LHD1	Gas	IDLEX	0.000323
LHD1	Gas	RUNEX	0.084383
LHD1	Gas	STREX	0.001071
LHD2	Gas	IDLEX	4.57E-05
LHD2	Gas	RUNEX	0.011292
LHD2	Gas	STREX	0.000127
MCY	Gas	RUNEX	0.004664
MCY	Gas	STREX	0.00041
MDV	Gas	RUNEX	0.29132
MDV	Gas	STREX	0.010181
MH	Gas	RUNEX	0.005284
MH	Gas	STREX	8.05E-07
OBUS	Gas	IDLEX	2.52E-05
OBUS	Gas	RUNEX	0.004605
OBUS	Gas	STREX	4.12E-05
SBUS	Gas	IDLEX	8.50E-05
SBUS	Gas	RUNEX	0.001376
SBUS	Gas	STREX	7.42E-06
T6TS	Gas	IDLEX	0.000114
T6TS	Gas	RUNEX	0.018578
T6TS	Gas	STREX	0.00019
T7IS	Gas	RUNEX	5.71E-05
T7IS	Gas	STREX	3.73E-07
UBUS	Gas	RUNEX	0.005415
UBUS	Gas	STREX	1.07E-05
LDA	Phe	RUNEX	0.013331
LDA	Phe	STREX	0.000748
LDT1	Phe	RUNEX	0.000224
LDT1	Phe	STREX	1.29E-05
LDT2	Phe	RUNEX	0.0032
LDT2	Phe	STREX	0.000207

MDV	Phe	RUNEX	0.00189
MDV	Phe	STREX	0.000152

Mill Valley Housing Element Update
Noise Analysis

E

APPENDIX

HOUSING ELEMENT UPDATE NOISE AND VIBRATION ASSESSMENT

Mill Valley, California

October 27, 2022

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I&R Project: 22-050

INTRODUCTION

The purpose of this report is to assess potential noise and vibration impacts associated with the proposed 2023-2031 Housing Element Update (HEU). The proposed 2023-2031 Housing Element will replace the existing Housing Element and serve as the City of Mill Valley's guiding policy document for meeting the City's future housing needs at all economic levels. As a policy document, the Housing Element does not result in direct physical changes to the environment but would indirectly lead to physical environmental changes by enabling the development of approximately 554 additional housing units within the City's jurisdiction. New density standards would permit 1,156 units on up to 266 sites distributed throughout the City, which would exceed the 602 units allowed by existing density standards. Figure 1 shows the site inventory map.

The Noise and Vibration Assessment includes a Setting section providing a brief description of the fundamentals of environmental noise and vibration, summarizes the applicable regulatory criteria, and discusses the results of ambient noise monitoring surveys completed to document existing conditions. The General Plan Consistency section evaluates the noise environment at the housing opportunities sites. The Impacts and Mitigation Measures section describes the significance criteria used to evaluate potential impacts, provides a description of each impact, and presents mitigation measures where necessary to provide a guideline for the implementation of the HEU for the City of Mill Valley.

SETTING

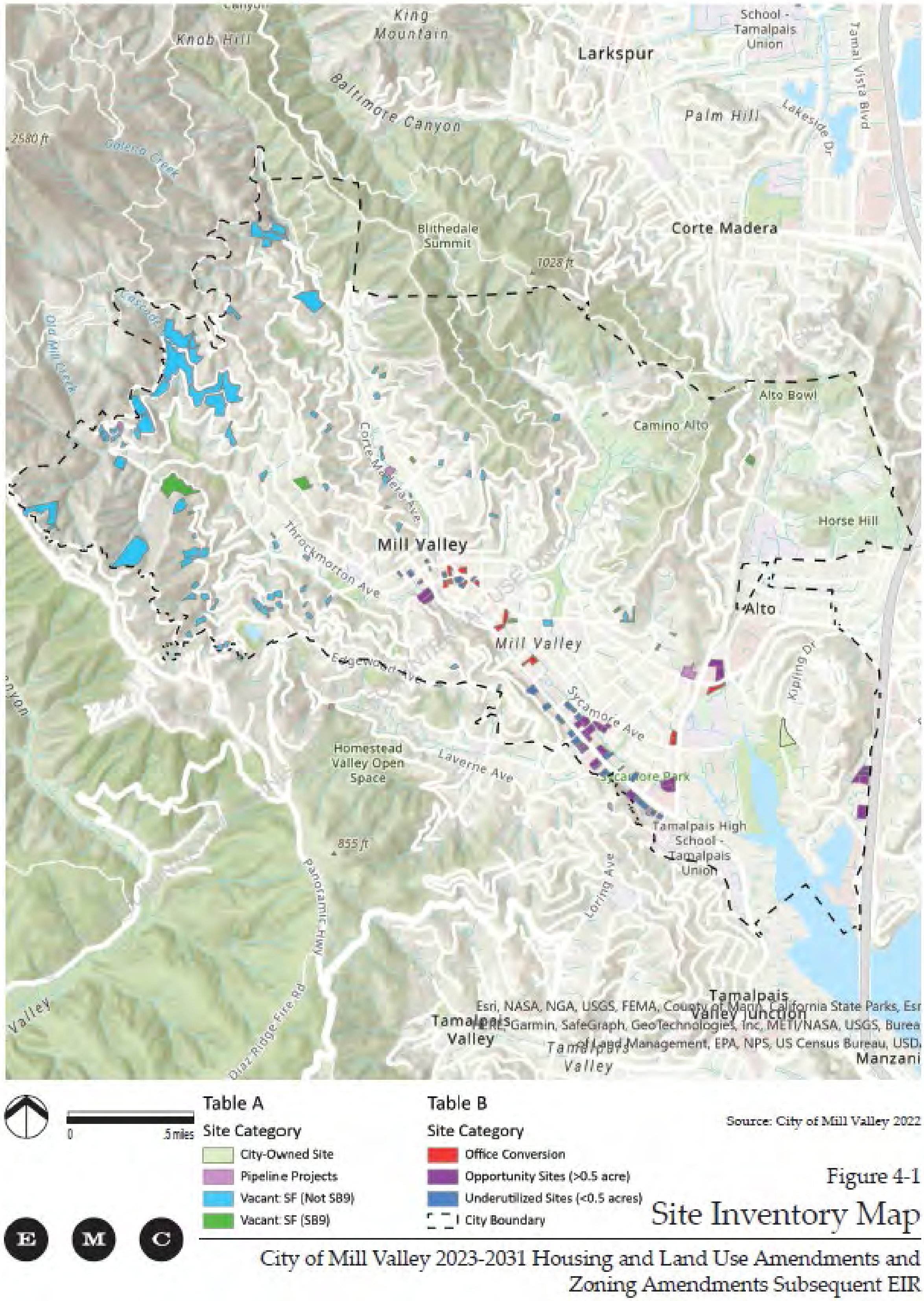
Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA

FIGURE 1 Site Inventory Map



are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (*L_{dn} or DNL*) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60-70 dBA. Between a L_{dn} of 70-80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

TABLE 1 **Definition of Acoustical Terms Used in this Report**

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from "Historic and some old buildings" to "Modern industrial/commercial buildings." Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

REGULATORY BACKGROUND

This section describes the relevant guidelines, policies, and standards established by State Agencies and the City of Mill Valley. The California Environmental Quality Act (CEQA) Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

(b) Generation of excessive groundborne vibration or groundborne noise levels;

(c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

2019 California Building Code, Title 24, Part 2. The current version of the California Building Code (CBC) requires interior noise levels in multi-family residential units attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn} in any habitable room.

City of Mill Valley General Plan. The City of Mill Valley's General Plan contains policies and programs to maintain a quiet community. Policies and programs contained in the Noise Element are as follows:

N.1 Interior and Exterior Noise

Ensure that interior noise levels do not exceed 45 L_{dn} in all new residential units (single- and multi-family). Analyze residential development sites exposed to noise levels exceeding 60 L_{dn} following protocols in the most recent adopted version of the California Building Code.

> N.1-1 Maintain a pattern of land uses that separates noise-sensitive land uses from major traffic noise sources to the extent feasible.
>
> N.1-2 Use the noise contours in Figure 8.7 and noise/land use compatibility standards in Figure 8.8 to ensure that new development and major redevelopment meet required interior and exterior noise standards.
>
> N.1-3 Do not allow noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels in outdoor activity areas to 60 dBA L_{dn} or less.

N.2 Roadway Noise

Reduce noise from traffic.

> N.2-1 Use "quieter" pavement technologies that also meet other criteria established by the City for pavements when resurfacing roadways.
>
> N.2-2 Control the sound of vehicle amplification systems (e.g., loud stereos) by encouraging the enforcement of Section 27007 of the California Motor Vehicle Code. This section prohibits amplified sound that can be heard 50 or more feet from a vehicle.
>
> N.2-3 Control excessive exhaust noise by encouraging the enforcement of Section 27150 of the California Motor Vehicle Code.

N.3 Acoustical Environment

Maintain the current quality of the acoustical environment.

> N.3-1 Require an acoustical analysis to mitigate noise-generating projects that would cause the following criteria to be exceeded or would cause a significant adverse community response in locations where there is greater sensitivity to excess noise:

- Cause the L_{dn} at noise-sensitive uses to increase by 3 dBA or more and exceed the "normally acceptable" level.

- Cause the L_{dn} at noise-sensitive uses to increase 5 dBA or more and remain "normally acceptable."

Locations subject to this program would include but are not limited to hospitals, nursing homes, theaters, auditoriums, churches, meeting halls, schools, libraries, museums, and parks.

N.3-2 Ensure that all acoustical analyses required by the City:

- Are prepared by a qualified person or firm experienced in the fields of environmental noise assessment and architectural acoustics as selected or pre-approved by the City.

- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

- Estimate existing and projected (20-year) noise levels in terms of L_{dn} and/or the standards of the noise ordinance, and compare those levels to the policies of this Noise Element.

- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of this Noise Element. Where the noise source in question consists of intermittent single events, the report shall address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

- Describe a post-project assessment program that could be used to evaluate the effectiveness of the proposed mitigation measures.

The full cost of any such studies shall be the responsibility of the project applicant.

N.4 Construction Noise

Manage noise from construction.

N.4-1 Implement appropriate standard noise controls for all construction projects.

N.4-2 Require detailed construction noise management plans.

N.4-3 Develop a guidance manual to provide information to the public regarding construction noise control.

Figure 8.8 | Land Use Compatibility for Roadway and Transportation Noise

City of Mill Valley Noise Ordinance. The City's noise ordinance contains quantitative noise limits for noise sources within the City of Mill Valley based on the land use of the receiving property. Allowable hours of construction are established in Section 7.16.090 of the noise ordinance. The sections reads as follows:

D. **Construction Projects.** Construction projects shall not take place between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, or at any time on Saturday, Sunday, or a legal holiday without issuance of a special permit. Exception: No permit is required to perform emergency work. Contractors shall be required to prominently display a notice of the date of commencement of construction noise at least three days prior to actual commencement. Such notice shall be located on the construction site and shall be readable from the closest adjacent street.

NOISE MEASUREMENT SURVEY

A noise monitoring survey was performed from Tuesday, September 27, 2022, through Friday, September 30, 2022, and from Tuesday, October 4, 2022, through Friday, October 7, 2022. The survey included four (4) long-term (LT) noise measurements and six (6) short-term (ST) noise measurements to quantify existing ambient noise levels in and around the identified housing opportunity sites. Long-term noise measurement data is provided in Appendix A. Noise measurement locations are shown in Figure 2.

Long-Term Noise Measurements

Noise measurement LT-1 was at 777 Redwood Highway. LT-1 was located about 185 feet west of the Highway 101 centerline. Traffic along Highway 101 was the primary source of noise in the area. Hourly average noise levels ranged from 64 to 70 dBA L_{eq} during the day and from 55 to 68 dBA L_{eq} at night. The average noise exposure level at this location on Wednesday, September 28, 2022 was 70 dBA L_{dn}. The average noise exposure level at this location on Thursday, September 29, 2022 was 70 dBA L_{dn}. Figures A1 through A4 in Appendix A show the trend in noise levels throughout the measurement period from September 27, 2022 to September 30, 2022.

Noise measurement LT-2 was at 653 E Blithedale Avenue. LT-2 was located about 55 feet north of the E Blithedale Avenue centerline. Traffic along E Blithedale Avenue was the primary source of noise in the area. Hourly average noise levels ranged from 61 to 81 dBA L_{eq} during the day and from 48 to 68 dBA L_{eq} at night. The average noise exposure level at this location on Wednesday, September 28, 2022 was 68 dBA L_{dn}. The average noise exposure level at this location on Thursday, September 29, 2022 was 68 dBA L_{dn}. Figures A5 through A8 in Appendix A show the trend in noise levels throughout the measurement period from September 27, 2022 to September 30, 2022.

Noise measurement LT-3 was near 42 Miller Avenue. LT-3 was located about 60 feet southwest of the Miller Avenue centerline. Traffic along Miller Avenue was the primary source of noise in the area. Hourly average noise levels ranged from 56 to 84 dBA L_{eq} during the day and from 38 to 68 dBA L_{eq} at night. The average noise exposure level at this location on Wednesday, September 28, 2022 was 63 dBA L_{dn}. The average noise exposure level at this location on Thursday, September 29, 2022 was 61 dBA L_{dn}. Figures A9 through A12 in Appendix A show the trend in noise levels throughout the measurement period from September 27, 2022 to September 30, 2022.

Noise measurement LT-4 was near 413 Miller Avenue. LT-4 was located about 65 feet northeast of the Miller Avenue centerline. Traffic along Miller Avenue was the primary source of noise in the area. Hourly average noise levels ranged from 59 to 67 dBA L_{eq} during the day and from 44 to 61 dBA L_{eq} at night. The average noise exposure level at this location on Wednesday, October 4, 2022 was 64 dBA L_{dn}. The average noise exposure level at this location on Thursday, October 5, 2022 was 64 dBA L_{dn}. Figures A13 through A16 in Appendix A show the trend in noise levels throughout the measurement period from October 4, 2022 to October 7, 2022.

FIGURE 2 Long-Term and Short-Term Noise Measurement Locations

Source: Google Earth 2022

Short-Term Noise Measurements

A series of six attended short-term (ST) 10 – minute duration measurements were also made to identify the noise sources that occurred during the measurement and to note the level of noise associated with these identifiable events. The attended measurements assist in quantitatively and qualitatively characterizing the noise environments along the major roadways and in the quieter areas of the city.

Short-term noise measurement ST-1 was conducted on Tuesday, September 27, 2022, between 11:00 a.m. and 11:10 a.m. to document typical noise levels along E Blithedale Avenue. This location was approximately 30 feet southwest of the centerline of E Blithedale Avenue. E Blithedale Avenue traffic typically produced noise levels ranging from 56 to 69 dBA. The 10-minute L_{eq} measured at ST-1 was 59 dBA.

Short-term noise measurement ST-2 was conducted on Tuesday, September 27, 2022, between 11:30 a.m. and 11:40 a.m. to document typical noise levels along La Goma Street. This location was approximately 30 feet southeast of the centerline of La Goma Street. La Goma Street traffic typically produced noise levels ranging from 52 to 74 dBA. The 10-minute L_{eq} measured at ST-2 was 58 dBA.

Short-term noise measurement ST-3 was conducted on Tuesday, September 27, 2022, between 11:50 a.m. and 12:00 p.m. to document typical noise levels along Miller Avenue. This location was approximately 80 feet southwest of the centerline of Miller Avenue. Miller Avenue traffic typically produced noise levels ranging from 58 to 73 dBA. The 10-minute L_{eq} measured at ST-3 was 62 dBA.

Short-term noise measurement ST-4 was conducted on Tuesday, September 27, 2022, between 12:40 p.m. and 12:50 p.m. to document typical noise levels along Camino Alto. This location was approximately 60 feet west of the centerline of Camino Alto. Camino Alto traffic typically produced noise levels ranging from 57 to 72 dBA. The 10-minute L_{eq} measured at ST-4 was 63 dBA.

Short-term noise measurement ST-5 was conducted on Tuesday, September 27, 2022, between 1:00 p.m. and 1:10 p.m. to document typical noise levels along Camino Alto. This location was approximately 50 feet east of the centerline of Camino Alto. Camino Alto traffic typically produced noise levels ranging from 59 to 69 dBA. The 10-minute L_{eq} measured at ST-4 was 60 dBA.

Short-term noise measurement ST-6 was conducted on Tuesday, September 27, 2022, between 1:40 p.m. and 1:50 p.m. to document typical noise levels expected along Hamilton Drive. This location was approximately 50 feet west of the centerline of Hamilton Drive. Hamilton Drive traffic typically produced noise levels ranging from 55 to 60 dBA. The 10-minute L_{eq} measured at ST-6 was 50 dBA. Data collected at short-term sites ST-1 through ST-6 are summarized in Table 4.

TABLE 4 Summary of Short-Term Noise Measurement Data

Noise Measurement Location (Date, Time)	Measured Noise Level, dBA						
	L_{max}	L_{min}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}
ST-1: ~30 feet from E Blithedale Avenue centerline (9/27/2022, 11:00 – 11:10 am)	69	49	66	62	57	51	59
ST-2: ~30 feet from La Goma Street centerline (9/27/2022, 11:30 – 11:40 am)	74	43	68	62	53	45	58
ST-3: ~80 feet from Miller Avenue centerline (9/27/2022, 11:50 am – 12:10 pm)	73	52	69	65	61	57	62
ST-4: ~60 feet from Camino Alto centerline (9/27/2022, 12:40 – 12:50 pm)	72	48	70	66	61	53	63
ST-5: ~50 feet from Camino Alto centerline (9/27/2022, 1:00 – 1:10 pm)	69	42	67	65	54	44	60
ST-6: ~50 feet from Hamilton Drive centerline (9/27/2022, 1:40 – 1:50 pm)	60	43	58	55	45	44	50

GENERAL PLAN CONSISTENCY ANALYSIS

The noise exposures of housing projects facilitated by the HEU are not considered under CEQA. This section addresses Noise and Land Use Compatibility for consistency with the policies set forth in the City's General Plan.

Noise and Land Use Compatibility

The applicable Mill Valley General Plan policies were presented in detail in the Regulatory Background section. Noise and Land Use Compatibility guidelines for new development are identified in the City's General Plan Figure 8.8. Single-family residential is considered "Normally Acceptable" up to 60 dBA L_{dn} and multiple-family residential is considered "Normally Acceptable" up to 65 dBA L_{dn}. In the following discussion, the noise and land use compatibility is evaluated for each HEU site. Noise control measures are discussed including site planning, sound walls, and detailed analysis per the requirements of the State Building Code leading to building sound insulation treatments.

Highway 101 Corridor. Housing opportunity sites are proposed just west of Highway 101. The noise exposure produced by ground transportation at sites along Highway 101 would range from 70 – 75 dBA L_{dn}. The noise and land use compatibility designation is "Conditionally Acceptable" where the "specified land use may be permitted only after a detailed analysis of the noise reduction requirements and needed noise insulation features included in the design."

E Blithedale Avenue Corridor. Housing opportunity sites proposed along the E Blithedale Avenue corridor would be exposed to ground transportation noise levels ranging from 65 – 70 dBA L_{dn}. The noise and land use compatibility designation is "Conditionally Acceptable" where "new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design."

Miller Avenue Corridor. Housing opportunity sites proposed along the Miller Avenue corridor would be exposed to ground transportation noise levels ranging from 60 – 65 dBA L_{dn}. The noise and land use compatibility designation is "Conditionally Acceptable" where "new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design."

Camino Alto Corridor. Housing opportunity sites proposed along the Camino Alto corridor would be exposed to ground transportation noise levels ranging from 60 – 65 dBA L_{dn}. The noise and land use compatibility designation is "Conditionally Acceptable" where "new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design."

Throckmorton Avenue and Hamilton Drive Corridors, and Sites Not Adjoining Major Roadways. Housing opportunity sites proposed along the Throckmorton Avenue and Hamilton Drive corridors, and away from the major roadways discussed above, would be exposed to ground transportation noise levels of 60 dBA L_{dn} or less. The noise and land use compatibility designation is "Normally Acceptable" where the "specified land use is satisfactory, based upon the assumption that any buildings are of normal conventional construction, without any special insulation requirements."

General Plan policy N.1 establishes a framework that will result in new housing included in the HEU to be compatible with the noise environments where they would be located. The following measures, applied individually or in combination, are recommended to implement the policies:

1) Utilize site planning to minimize noise impacts to outdoor activity areas. Consider locating non-noise sensitive uses, such as parking (e.g., carports), adjacent to roadways, and using the residential buildings to provide shielding for common outdoor use areas. Site planning is critical for sites proposed in "Conditionally Acceptable" or "Unacceptable" noise environments.

2) Construct noise barriers where necessary to shield outdoor activity areas from local street traffic noise. Barriers 6 - 10 feet high can provide the 5 – 10 dBA of the noise reduction necessary to make the "Conditionally Acceptable" noise environment compatible. The final location, heights, and designs of barriers will be determined during development of the site plan.

3) General Plan policy HS-35 stipulates that residential developers shall comply with relevant noise insulation standards to maintain indoor noise levels at or below 45 dBA L_{dn}. Where exterior noise levels would exceed 60 dBA L_{dn}, an analysis detailing the treatments incorporated into the building plans shall be prepared and submitted to the City Building Department prior to issuance of a building permit. The report shall demonstrate that the design would achieve an interior level of 45 dBA L_{dn} or less in all habitable residential areas.

NOISE IMPACTS AND MITIGATION MEASURES

This section describes the significance criteria used to evaluate project impacts under CEQA, provides a discussion of each project impact, and presents mitigation measures, where necessary, to provide a compatible project in relation to adjacent noise sources and sensitive receivers.

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise and vibration resulting from the project:

1. **Temporary or Permanent Noise Increases in Excess of Established Standards.** A significant impact would be identified if project construction or operations would result in a substantial temporary or permanent increase in ambient noise levels at sensitive receivers in excess of the local noise standards contained in the Mill Valley General Plan or Municipal Code, as follows:

    - Temporary Noise Increase. A significant temporary noise impact would be identified if construction would occur outside of the hours specified in the Municipal Code (Section 7.16.090) or if construction noise levels would increase ambient noise levels resulting in measurable annoyance. The noise increase threshold adjusts based on the ambient noise level with the expectation that communities already exposed to high levels of noise can only tolerate a small increase. In contrast, if the existing noise levels are low, it is reasonable to allow a greater change in the community noise.

    - Permanent Noise Increase. A significant impact would be identified if traffic or school activity noise generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) the noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater (Policy N.3 Acoustical Environment).

2. **Generation of Excessive Groundborne Vibration.** A significant impact would be identified if the construction of the project would generate excessive vibration levels. Groundborne vibration levels exceeding 0.25 in/sec PPV would be considered excessive as such levels would have the potential to result in cosmetic damage to historic and some old buildings. Groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in cosmetic damage to buildings that are found to be structurally sound but where structural damage is a major concern, and groundborne vibration levels exceeding 0.5 in/sec PPV would have the potential to result in cosmetic damage to buildings that are structurally sound and designed to modern engineering standards.

3. **Exposure to Excessive Aircraft Noise Levels.** A significant noise impact would be identified if the project would expose people residing or working in the project area to excessive aircraft noise levels.

Impact 1: Permanent or Temporary Noise Increases in Excess of Established Standards. Increased vehicle traffic due to the HEU would not result in a substantial permanent increase traffic noise levels along area roadways. Construction activities facilitated by the HEU would not result in substantial temporary noise increases that would be in excess of applicable local standards at nearby sensitive receptors. **This is a less-than-significant impact.**

Permanent Noise Increases from Project Traffic

Increases in traffic noise gradually degrade the environment in areas sensitive to noise. According to CEQA, "a substantial increase" is necessary to cause a significant environmental impact. An increase of 3 dBA L_{dn} is considered substantial as it would represent a just-noticeable difference. Vehicular traffic on roadways in the City would increase as development occurs and the City's population increases. These projected increases in traffic would, over time, increase noise levels throughout the community.

The results presented in Table 5 indicate that project-generated traffic noise levels would not measurably increase due to anticipated traffic volume increases along major roadways in Mill Valley. The traffic noise increases attributable to the implementation of the HEU would not result in a substantial permanent increase noise levels in the community. This is a less-than-significant impact.

TABLE 5 PM Peak Hour Traffic Volumes and Project-Generated Traffic Noise Increases

Roadway	Location	PM Peak Hour Volumes			Cumulative Noise Increase (dBA)		
		Existing	Cumulative	Cumulative Plus Project	Cumulative Versus Existing	Cumulative Plus Project Versus Existing	Project Contribution
East Blithedale Avenue	E. of Tower Drive	2806	2870	2991	0	0	0
East Blithedale Avenue	W. of Tower Drive	2507	2563	2678	0	0	0
East Blithedale Avenue	E. of Lomita Drive	2202	2251	2365	0	0	0
East Blithedale Avenue	W. of Lomita Drive	2642	2702	2867	0	0	0
East Blithedale Avenue	E. of Camino Alto	2620	2679	2845	0	0	0
East Blithedale Avenue	W. of Camino Alto	1496	1530	1593	0	0	0
East Blithedale Avenue	E. of Elm Avenue	1082	1106	1166	0	0	0
East Blithedale Avenue	W. of Elm Avenue	1078	1102	1162	0	0	0
East Blithedale Avenue	E. of Carmelita Avenue	1329	1359	1403	0	0	0
East Blithedale Avenue	W. of Carmelita Avenue	1166	1193	1237	0	0	0
East Blithedale Avenue	E. of Sunnyside Avenue	959	980	1015	0	0	0
East Blithedale Avenue	W. of Sunnyside Avenue	830	849	893	0	0	0
East Blithedale Avenue	E. of Throckmorton Avenue	856	876	920	0	0	0
East Blithedale Avenue	W. of Throckmorton Avenue	822	841	879	0	0	0
Miller Avenue	E. of Throckmorton Avenue	631	645	686	0	0	0
Miller Avenue	E. of Sunnyside Avenue	430	440	450	0	0	0
Miller Avenue	W. of Sunnyside Avenue	172	176	176	0	0	0
Miller Avenue	E. of Locust Avenue	1360	1392	1483	0	0	0
Miller Avenue	W. of Locust Avenue	1212	1240	1331	0	0	0
Miller Avenue	E. of La Goma Street	1672	1709	1790	0	0	0
Miller Avenue	W. of La Goma Street	1392	1424	1515	0	0	0
Miller Avenue	E. of Evergreen Avenue	1858	1899	1975	0	0	0
Miller Avenue	W. of Evergreen Avenue	1667	1704	1780	0	0	0
Miller Avenue	E. of Valley Circle	2055	2101	2181	0	0	0
Miller Avenue	W. of Valley Circle	1810	1850	1939	0	0	0
Miller Avenue	E. of Camino Alto	1876	1918	1955	0	0	0

Roadway	Location	PM Peak Hour Volumes			Cumulative Noise Increase (dBA)		
		Existing	Cumulative	Cumulative Plus Project	Cumulative Versus Existing	Cumulative Plus Project Versus Existing	Project Contribution
Miller Avenue	W. of Camino Alto	1853	1894	1984	0	0	0
Camino Alto	N. of Miller Avenue	1719	1758	1839	0	0	0
Camino Alto	N. of Sycamore Avenue	1807	1848	1971	0	0	0
Camino Alto	S. of Sycamore Avenue	1689	1727	1805	0	0	0

Temporary Noise Increases from Project Construction

Background Information on Construction Noise

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and sensitive receivers. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas near noise-sensitive land uses, or when construction lasts over extended periods of time.

Typically, construction activities would be carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Typical construction noise levels at a distance of 50 feet are shown in Tables 6 and 7. Table 6 shows the average noise level ranges, by construction phase, and Table 7 shows the maximum noise level ranges for different construction equipment. Most demolition and construction noise falls in the range of 80 to 90 dBA at 50 feet from the source. Construction-generated noise levels drop off/increase at a rate of about 6 dBA per doubling/halving of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

TABLE 6 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I – All pertinent equipment present at site.
II – Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 7 Construction Equipment 50-foot Noise Emission Limits

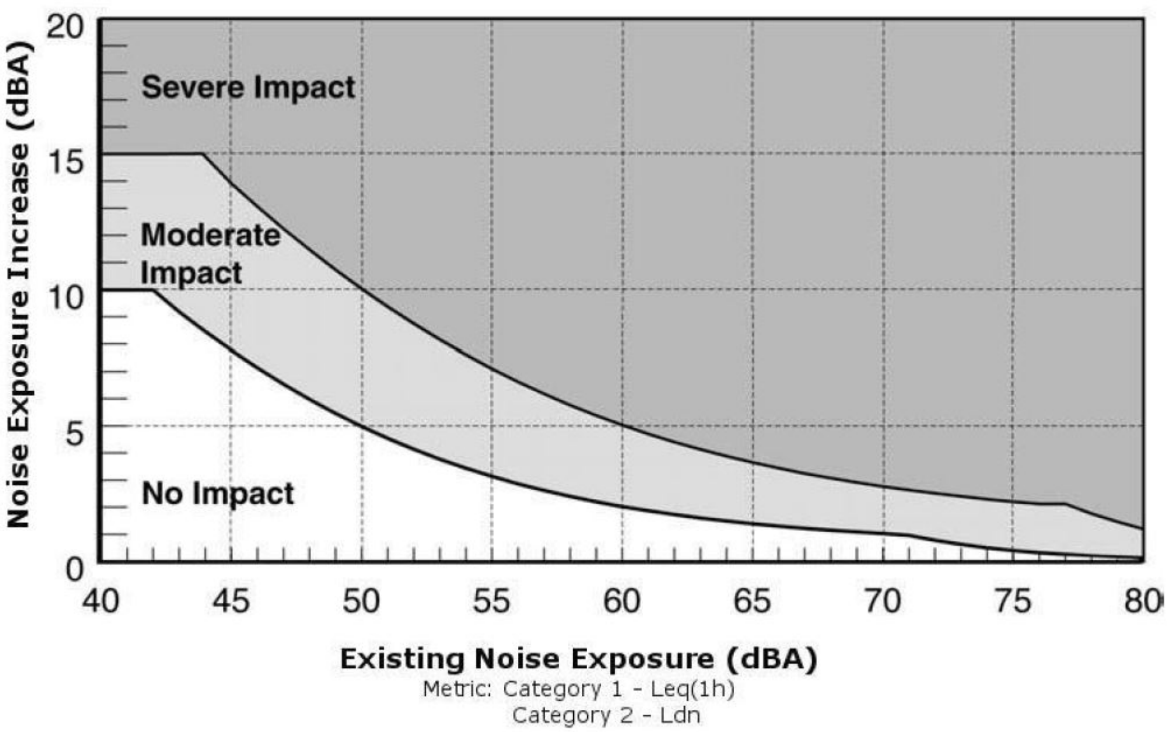
Equipment Category	L_{max} Level (dBA)1,2	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Ballast Equalizer[3]	82	Continuous
Ballast Tamper[3]	83	Continuous
Bar Bender	80	Continuous
Chain Saw	85	Continuous
Compressor (air)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rail Saw[3]	90	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tie Cutter[3]	84	Continuous
Tie Handler[3]	80	Continuous
Tie Inserter[3]	85	Continuous
Tractor	84	Continuous
Truck	84	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: [1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant. [2]Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.[3] Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, FTA Report No. 0123, September 2018., [4] Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

Construction Noise Criteria

A significant noise impact would be identified if construction required for the development of housing would generate a substantial temporary noise level increase over ambient noise levels at noise sensitive receivers. Criteria established by the Federal Transit Administration (FTA) specify a comparison of the total noise levels resulting from a project plus the ambient noise levels to the ambient noise levels existing without the project, as shown below in Figure 3. Category 1 receivers are daytime only uses and Category 2 receivers are 24-hour uses such as residences. The "Moderate Impact" zone represents the threshold of measurable annoyance. For temporary construction noise, the upper boundary of the "Moderate Impact" zone is used to define a substantial temporary noise increase above ambient conditions. For example, if the existing noise were measured to be 60 dBA L_{dn}, and the combined noise including the construction of the project would exceed 65 dBA L_{dn}, the increase in the ambient would be considered substantial, resulting in significant impact. A significant noise impact would also be identified if construction occurred outside of allowable hours. Section 7.16.090 of the noise ordinance specifies that construction projects shall not take place between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, or at any time on Saturday, Sunday, or a legal holiday without issuance of a special permit.

FIGURE 3 Increase in Cumulative Noise Levels Allowed by Criteria



Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018.

Construction Noise Impact Assessment

Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the hourly average noise levels for each phase of construction, assuming the two loudest pieces of equipment would operate simultaneously, as recommend by the FTA for construction noise evaluations. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power.

For the purposes of analyzing a credible worst-case scenario, the construction equipment and phasing information of an example multi-family project was used to calculate construction noise levels on an hourly basis (Hourly L_{eq}) and on an average basis throughout an approximate 20-month construction period (Average L_{dn}). The construction noise levels would represent the majority of residential construction projects anticipated under the HEU, although the duration of the project would vary depending on the size of the project. Equipment expected to be used in each construction phase are summarized in Table 8, along with the quantity of each type of equipment, the reference noise level at 50 feet assuming the operation of the two loudest pieces of construction equipment, and the estimated noise levels at the nearest property lines projected from the center of the construction activity by phase. Construction noise levels were also calculated at distances of 100, 200, 400, and 500 feet.

Table 9 summarizes the minimum distances between construction sites and receptors in various ambient noise environments. In relatively quiet noise environments (i.e., 55 dBA L_{dn}), construction noise can increase ambient noise levels by up to 7 dBA L_{dn} before a substantial temporary noise increase would occur. Construction activities occurring within 315 feet of sensitive receptors (as measured from the acoustic center of the construction site) would result in a substantial temporary noise increase above ambient conditions. Conversely, in relatively noisy environments (i.e., 75 dBA L_{dn}), construction noise can increase ambient noise levels by up to 2 dBA L_{dn} before a substantial temporary noise increase would occur. Construction activities occurring within 80 feet of sensitive receptors (as measured from the acoustic center of the construction site) would result in a substantial temporary noise increase above ambient conditions.

TABLE 8 Construction Noise Levels

Phase	Construction Equipment (Quantity)	Calculated Hourly Average L_{eq} and L_{dn} (dBA) From Operation of Two Loudest Pieces of Construction Equipment				
		Noise Level at 50 feet	Noise Level at 100 feet	Noise Level at 200 feet	Noise Level at 400 feet	Noise Level at 500 feet
Demolition	Concrete/Industrial Saw (1)* Excavator (2) Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (2)*	85	79	73	67	65
Site Preparation	Grader (2)* Rubber-Tired Dozer (2) Tractor/Loader/Backhoe (2)	84	78	72	66	64
Grading/ Excavation	Excavator (4) Grader (2) Rubber Tired Dozer (1) Concrete/Industrial Saw (2)* Tractor/Loader/Backhoe (2)	86	80	74	68	66
Trenching/ Foundation	Excavator (2)* Tractor/Loader/Backhoe (2)*	82	76	70	64	62
Building Exterior	Crane (3) Forklift (2) Generator Set (1)* Tractor/Loader/Backhoe (2)* Welders (2)	82	76	70	64	62
Building Interior/ Architectural Coating	Aerial Lift (2) Air Compressor (10)*	77	71	65	59	57
Paving	Cement and Mortar Mixer (4) Paver (4) Paving Equipment (4) Roller (4) Tractor/Loader/Backhoe (4)*	83	77	71	65	63
Average Construction Noise L_{dn}		**77**	**71**	**65**	**59**	**57**

*Denotes two loudest pieces of construction equipment per phase

TABLE 9 Noise Levels and Distances Defining Noise Impacts Due to Construction

Existing Ambient Noise Level (L_{dn})	Maximum Allowable Construction Noise Level (L_{dn})	Overall Noise Level (L_{dn})	Increase Above Ambient (L_{dn})	Minimum Distance to Avoid Substantial Temporary Noise Increase (feet)
55	61	62	7	315
60	63	65	5	250
65	66	69	4	175
70	69	73	3	125
75	73	77	2	80

Mitigation Measure 1:

Implement General Plan Policy N.4 which requires the implementation of appropriate standard noise controls for all construction projects and the preparation of detailed construction noise management plans to minimize the exposure of neighboring properties to excessive noise levels. Construction activities are required to comply with the City's noise ordinance limitations on hours and days of operations.

A Construction Noise Management Plan shall be prepared by the construction contractor and implemented prior to the start of and throughout construction to reduce noise impacts on the nearby existing land uses. The plan will rely on project-level calculations of construction noise and achievable noise level reduction. The plan will establish the procedures the contractor will take to reasonably minimize construction noise at the nearby existing land uses. Additionally, the plan would include, but not be limited to, the following measures to reduce construction noise levels as low as practical:

- Limit construction to the hours of 7:00 AM to 6:00 PM on weekdays. No noise generating construction activities shall occur on weekends or holidays.
- Control noise from construction workers' radios to the point where they are not audible at existing residences that border the project site.
- Equip all internal combustion engine-driven equipment with mufflers that are in good condition and appropriate for the equipment.
- Use quiet models of air compressors and other stationary noise sources where technology exists.
- Locate stationary noise-generating equipment and staging areas as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
- Prohibit unnecessary idling of internal combustion engines.
- Consider temporary noise barriers during construction phases involving earth moving equipment (e.g., grading operations) where they would be effective in reducing the construction noise impact, when directly adjoining sensitive receptors. An eight-foot plywood noise barrier could reduce noise levels by at least 5 dBA.
- Notify residents adjacent to the project site of the construction schedule in writing.

- Designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site.

Implementation of mitigation would limit construction hours and reduce construction noise levels at noise sensitive locations. The highest noise levels would occur during site grading and during periods where construction is located directly adjacent to noise sensitive locations. With the implementation of Mitigation Measure 1, construction noise levels will be reduced to the extent feasible, resulting in a less-than-significant impact.

Impact 2: **Exposure to Excessive Groundborne Vibration during Construction.** Construction activities occurring as part of the project could expose sensitive land uses to excessive groundborne vibration. This is a **significant** impact.

The California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV to avoid damage to buildings that are structurally sound and designed to modern engineering standards, a vibration limit of 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a vibration limit of 0.25 in/sec PPV for historic and some old buildings.

Construction equipment such as pile drivers are known to generate substantial vibration levels that if used in the vicinity of sensitive land uses may expose persons to excessive vibration levels as well as have the potential to damage buildings. Other construction equipment such as bulldozers and vibratory rollers do not create the vibration levels of pile drivers; however, these types of equipment are more likely to operate continuously and closer to sensitive receptors, and they may expose persons to excessive vibration levels. Foundation construction techniques involving impact or vibratory pile driving equipment, which can cause excessive vibration, are not expected with the proposed HEU.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 10 presents typical vibration levels that could be expected from construction equipment at a distances of 25 feet to 100 feet. Vibration levels would be higher at distances less than 25 feet and lower at distances greater than 100 feet. Vibration levels would also vary depending on soil conditions, construction methods, and equipment used. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet.

TABLE 10 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	PPV at 50 ft. (in/sec)	PPV at 100 ft. (in/sec)
Clam shovel drop		0.202	0.094	0.044
Hydromill (slurry wall)	in soil	0.008	0.004	0.002
	in rock	0.017	0.008	0.004
Vibratory Roller		0.210	0.098	0.046
Hoe Ram		0.089	0.042	0.019
Large bulldozer		0.089	0.042	0.019
Caisson drilling		0.089	0.042	0.019
Loaded trucks		0.076	0.035	0.017
Jackhammer		0.035	0.016	0.008
Small bulldozer		0.003	0.001	0.001

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., October 2022.

Table 11 summarizes the minimum safe setback distances to maintain in order to achieve the 0.25 in/sec PPV threshold for historical buildings and the 0.3 in/sec and 0.5 in/sec PPV thresholds for modern buildings.

TABLE 11 Vibration Source Levels for Construction Equipment and Minimum Safe Setbacks

Equipment		Minimum Safe Setback (feet) 0.25 in/sec PPV	Minimum Safe Setback (feet) 0.30 in/sec PPV	Minimum Safe Setback (feet) 0.50 in/sec PPV
Clam shovel drop		21	18	11
Hydromill (slurry wall)	in soil	<1	<1	<1
	in rock	3	2	2
Vibratory Roller		22	19	12
Hoe Ram		10	9	6
Large bulldozer		10	9	6
Caisson drilling		10	9	6
Loaded trucks		9	8	5
Jackhammer		5	4	3
Small bulldozer		<1	<1	<1

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., October 2022.

A review of the Mill Valley Historic Resources Inventory (HRI) Survey Report[1] shows that the following properties may be developed with new residential units or would be subject to development on immediately adjacent properties:

- 19 Corte Madera Avenue (Masonic Hall)
- 26 Corte Madera Avenue (City Hall)
- 491 Ethel Avenue
- 17 Madrona Street (Mill Valley Record)
- 18 Miller Avenue (Mill Valley Bank)
- 270 Miller Avenue (Mortuary)
- 306 Miller Avenue
- 414 Miller Avenue (Quonsets)
- 700 Miller Avenue (Tamalpais High, Wood Hall)
- 15 Sunnyside Avenue
- 55 Sunnyside Avenue (Post Office)
- 14 Sycamore Avenue
- 11-15 Throckmorton Avenue (Holtum Building)
- 17 Throckmorton Avenue (El Paseo Complex) 20
- 25 Throckmorton Avenue (Sequoia Theater)
- 60 Throckmorton Avenue (Bank of Mill Valley, now Bank of America)
- 82 Throckmorton Avenue (Keystone Building)
- 87 Throckmorton Avenue (Train Depot)
- 118 Throckmorton Avenue
- 142 Throckmorton Avenue (Hub Theater)

All other HEU sites would be 40 feet or further from existing historic resources identified in the HRI. Since specific future projects within the City are unknown at this time, it is conservatively assumed that the construction areas associated with these future projects could be located within the minimum safe setback distances identified in Table 11. For projects that produce vibration levels exceeding the thresholds, construction vibration would be expected to cause both human annoyance and the possibility of cosmetic damage, thus resulting in a significant impact.

Mitigation Measure 2:

Groundborne vibration studies shall be prepared by qualified professionals in accordance with industry-accepted methodology where heavy construction activities involving significant site grading, underground, or foundation work will occur within 25 feet of residential or other vibration sensitive uses. The industry-accepted methodologies include the recommended vibration assessment procedure and thresholds provided by public agencies such as Caltrans or the Federal Highway Administration. The studies should identify necessary construction vibration controls to reduce both human annoyance and the possibility of cosmetic damage. Controls shall include, but not be limited to, the following measures:

[1] Historic Resources Inventory (HRI) Survey Report, Page & Turnbull, June 7, 2021. https://www.cityofmillvalley.org/DocumentCenter/View/1546/HRI?bidId=

- A list of all heavy construction equipment to be used for this project known to produce high vibration levels (tracked vehicles, vibratory compaction, jackhammers, hoe rams, etc.) shall be submitted to the City by the contractor. This list shall be used to identify equipment and activities that would potentially generate substantial vibration and to define the level of effort for reducing vibration levels below the thresholds.

- Place operating equipment on the construction site as far as possible from vibration-sensitive receptors.

- Use smaller equipment to minimize vibration levels below the limits.

- Avoid using vibratory rollers and tampers near sensitive areas.

- Select demolition methods not involving impact tools.

- Modify/design or identify alternative construction methods to reduce vibration levels below the limits.

- Avoid dropping heavy objects or materials.

With the implementation of mitigation, short-term construction activities would not expose persons to excessive vibration levels. Therefore, impacts related to construction vibration would be mitigated to a less-than-significant level.

Impact 3: **Excessive Aircraft Noise.** Proposed housing opportunity sites would not be within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport or public use airport and exposed to excessive noise levels.

The San Rafael Airport is a private use airport located east of US 101 and south of Smith Ranch Road, over six miles from the Mill Valley city limits. Exhibit 4.4-6 of the Marin Countywide Plan shows San Rafael Airport noise contours as of 2003[2]. The San Rafael Airport is restricted by a Conditional Use Permit to a maximum of 100-based aircraft (i.e., no more than 100 aircraft can be based at this airport at any time). Noise exposure contours associated with this population of aircraft have not changed since 1987. No changes in the aviation use of the airport are expected in the future. No housing sites would be located within two miles of the San Rafael Airport, and based on a review of Exhibit 4.4-6 of the Marin Countywide Plan, aircraft operations would not expose persons to excessive aircraft noise exceeding 65 dBA CNEL.

The Richardson Bay Heliport is located northeast of U.S. 101 at the terminus of Bolinas Street. Exhibit 4.4-7 of the Marin Countywide Plan shows the noise contours for the heliport as of 2005. The Richardson Bay Heliport similarly has not experienced significant changes in activity levels nor are there any proposals to change the level of activity. Housing sites proposed in the southeast

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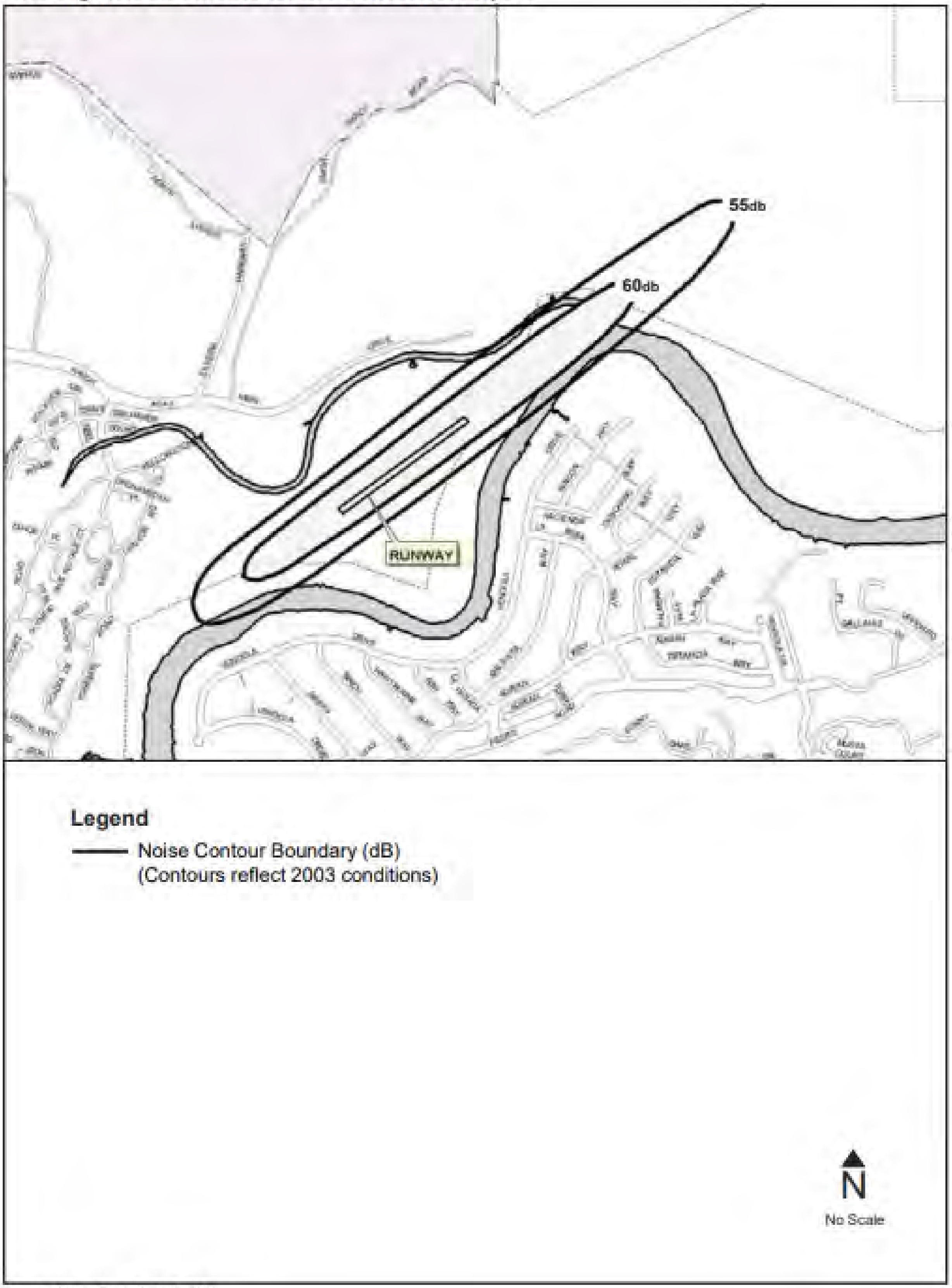
[2] Marin Countywide Plan Update Draft Environmental Impact Report, January 2007. https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp_eir/cwp_deir_2007.pdf?la=en

portion of the City would be located within two miles of the Richardson Bay Heliport, however, as described above, aircraft associated with the heliport is not a predominant noise source at any of the nearby sites, and based on a review of Exhibit 4.4-7 of the Marin Countywide Plan, aircraft operations would not expose persons to excessive aircraft noise exceeding 65 dBA CNEL.

All proposed housing sites are located outside of the 55 dB CNEL noise contour for both the San Rafael Airport and the Richardson Bay Heliport. Thus, the project would have a less-than-significant impact as aircraft noise exposure would be considered compatible with proposed housing sites.

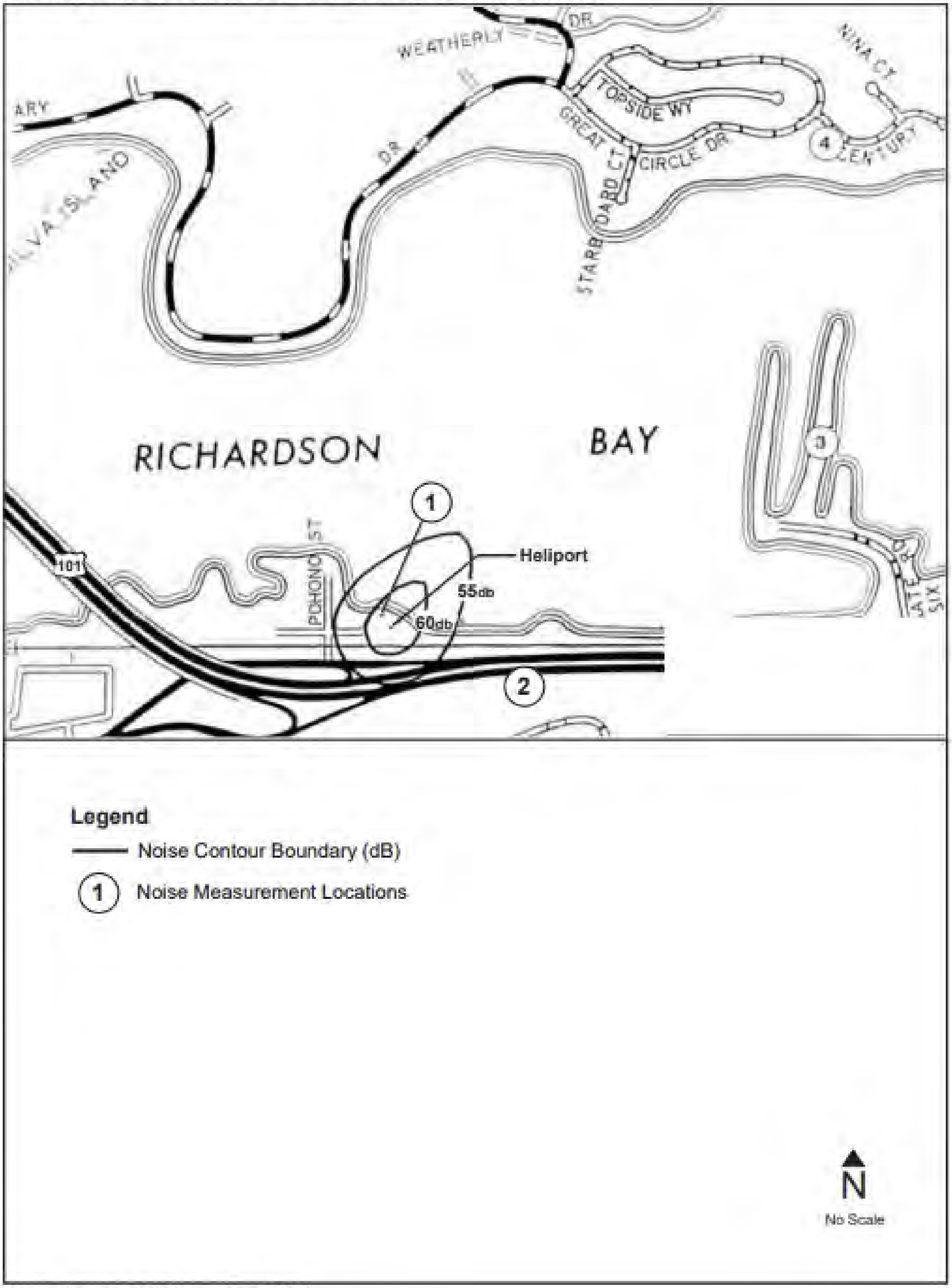
Mitigation Measure 3: None required.

Exhibit 4.4-6
Existing Noise Contours for the San Rafael Airport



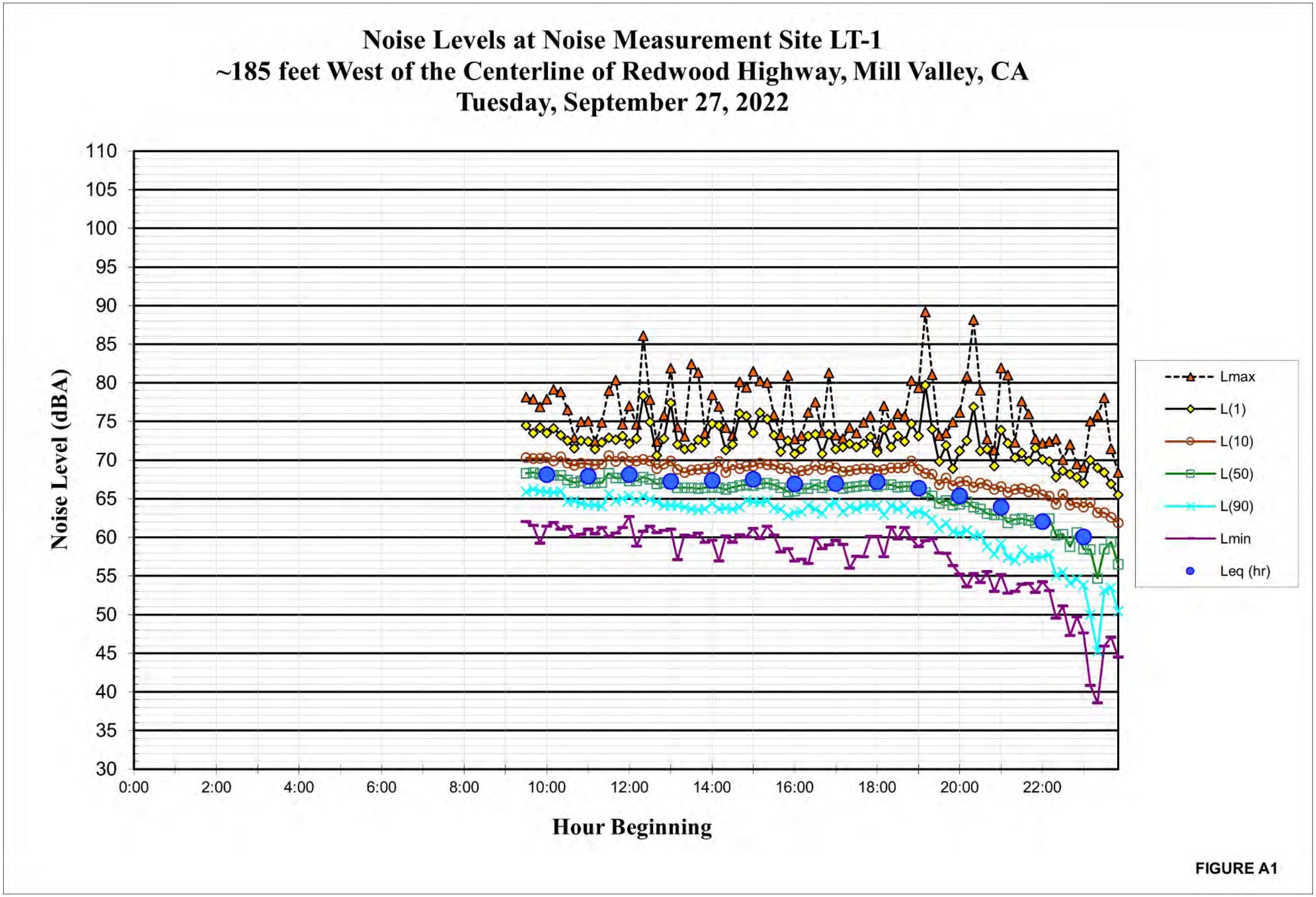
Source: City of San Rafael, 2003.

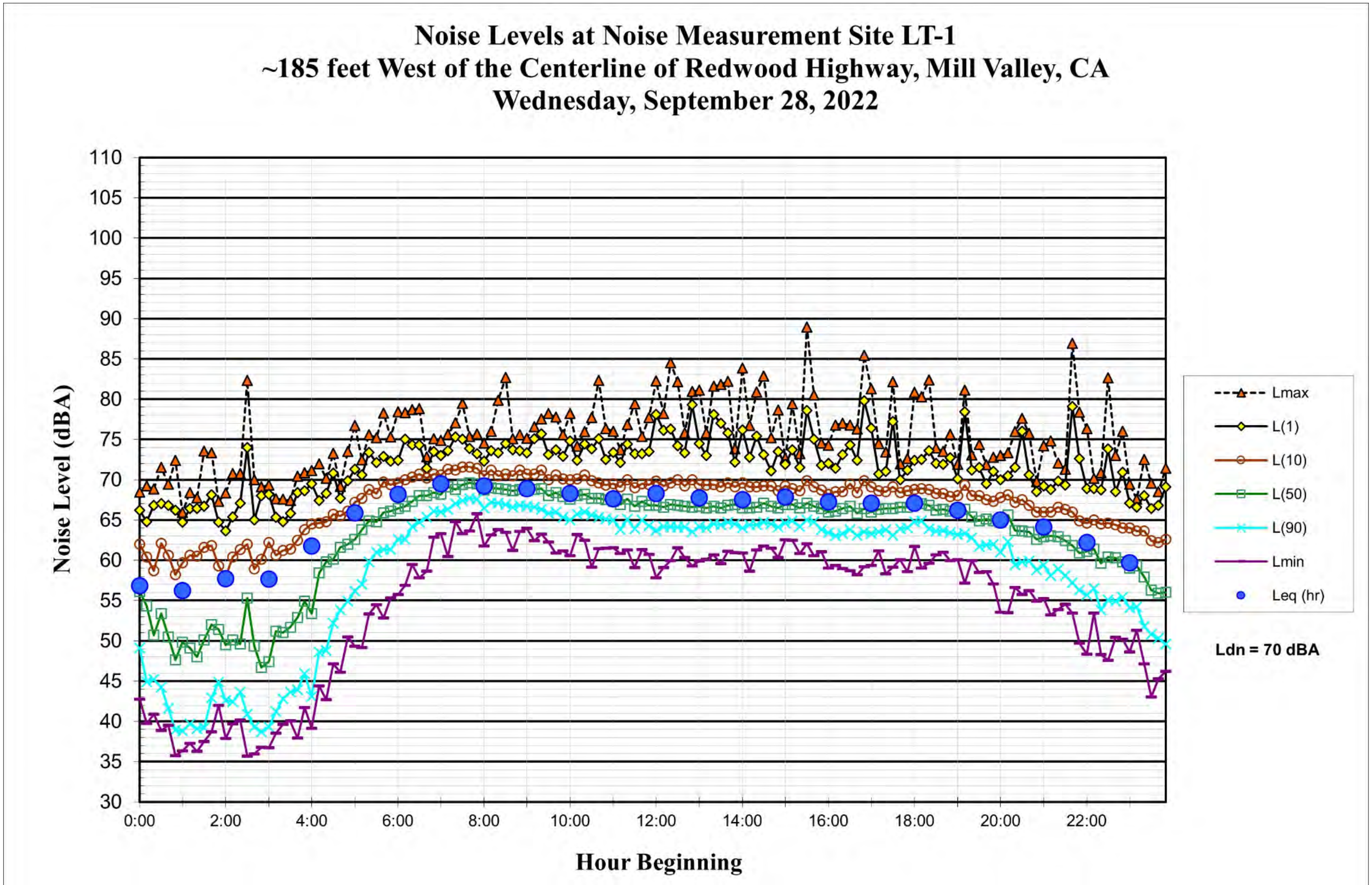
Exhibit 4.4-7
Existing Noise Contours for the Richardson Bay Heliport

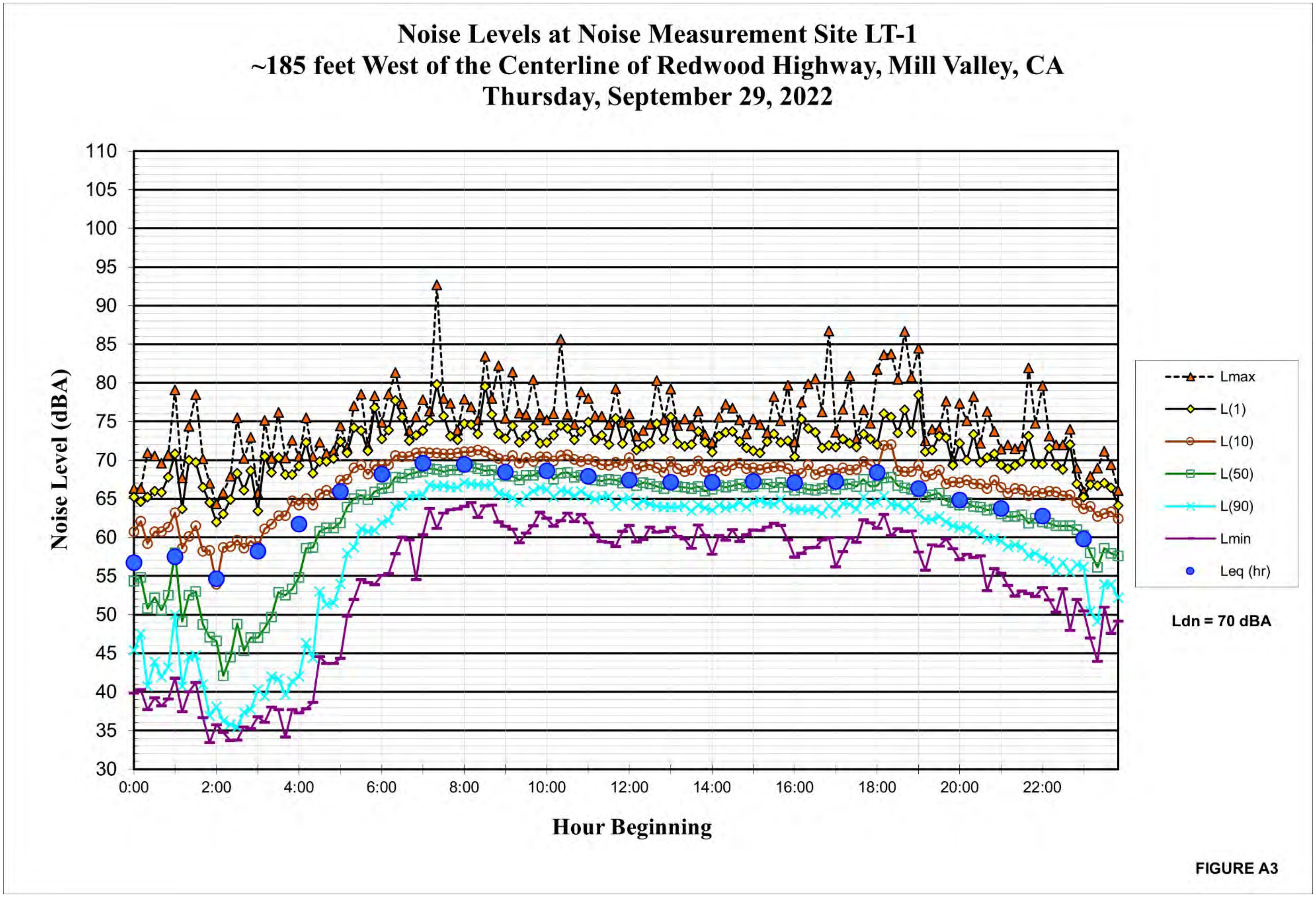


Source: Illingworth & Rodkin, confirmed 2005.

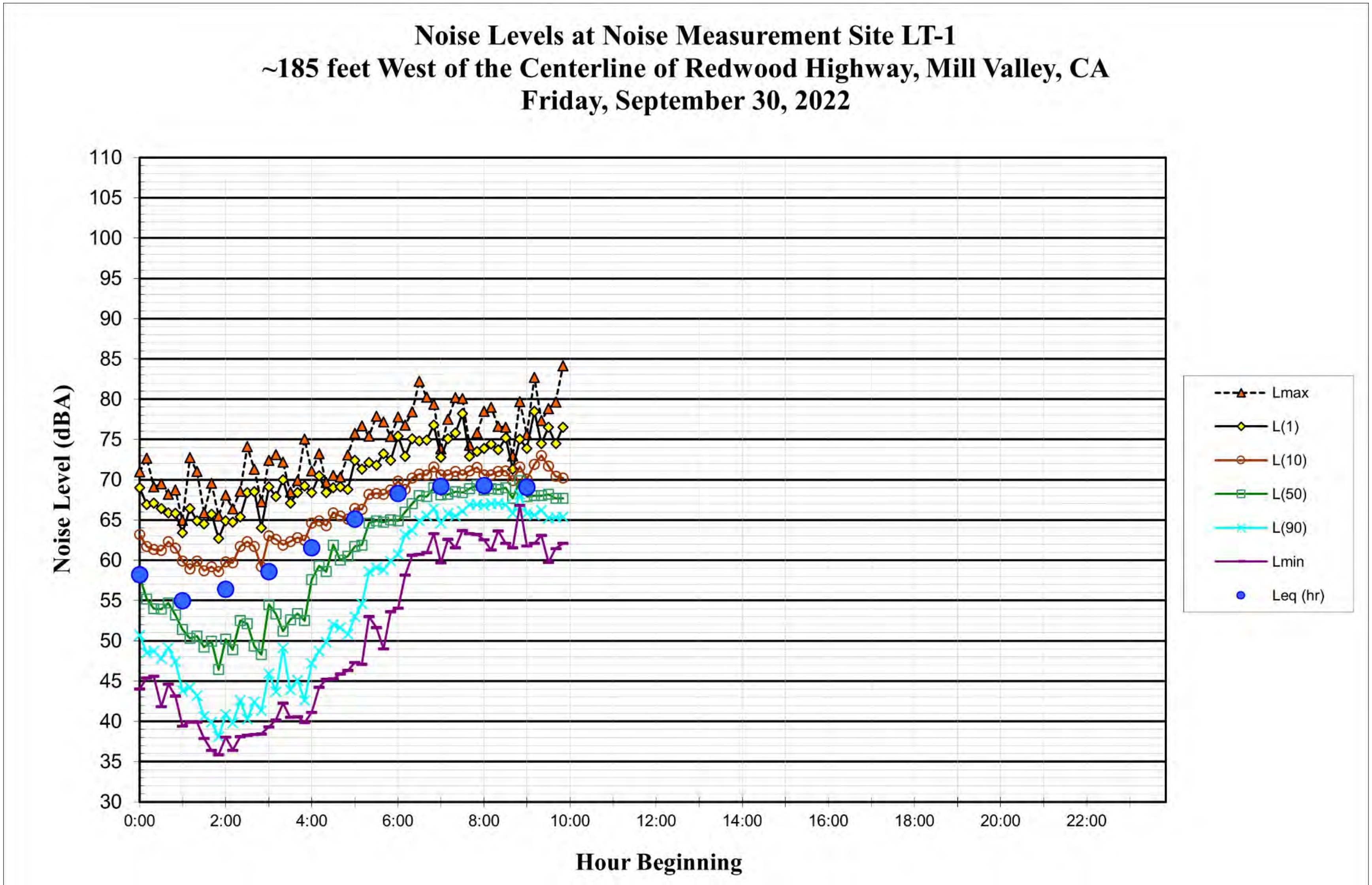
Appendix A – Long-Term Noise Data


Noise Levels at Noise Measurement Site LT-1
~185 feet West of the Centerline of Redwood Highway, Mill Valley, CA
Tuesday, September 27, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
FIGURE A1


Noise Levels at Noise Measurement Site LT-1
~185 feet West of the Centerline of Redwood Highway, Mill Valley, CA
Wednesday, September 28, 2022
Noise Level (dBA)
Hour Beginning
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 70 dBA
FIGURE A2

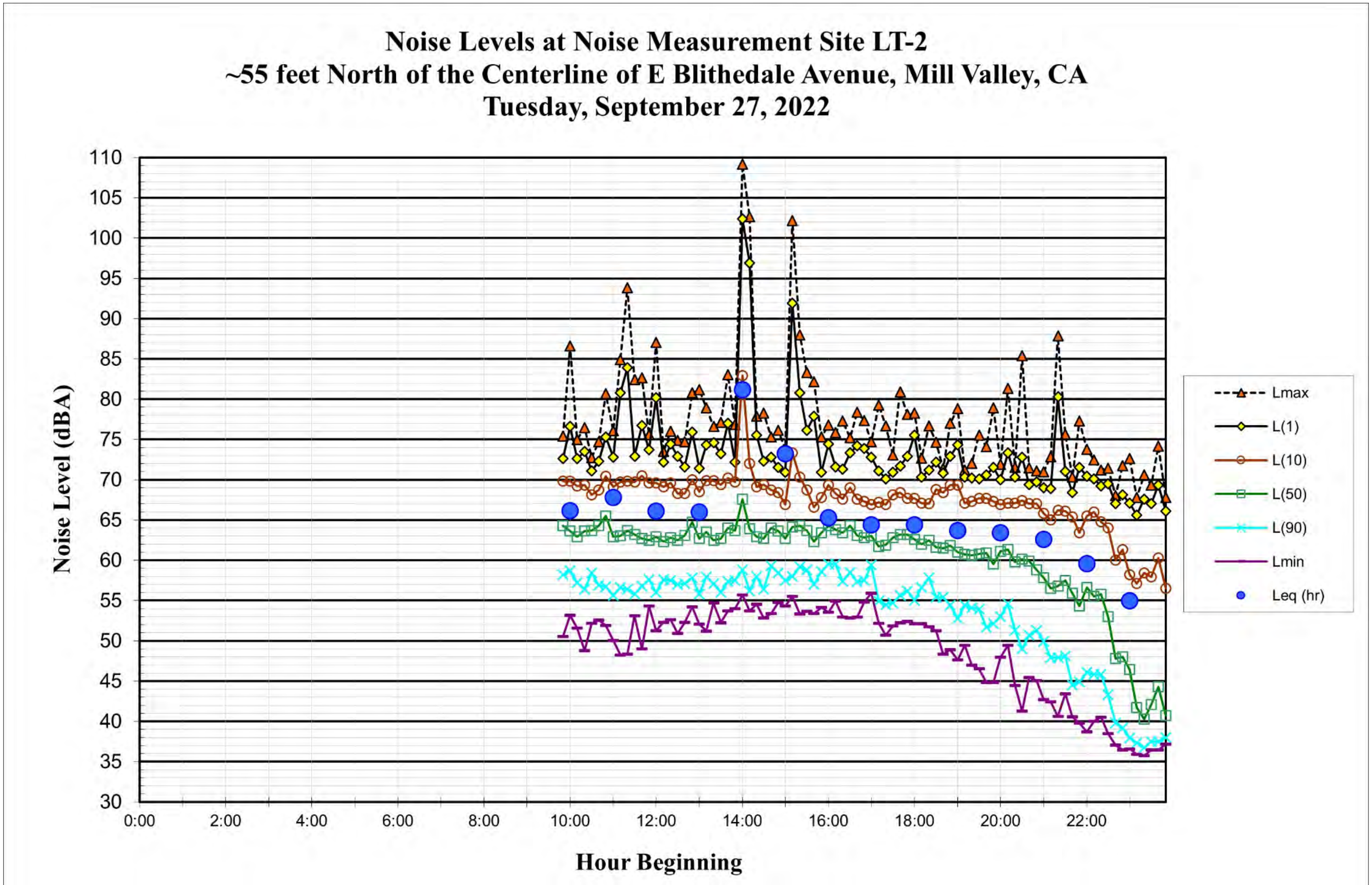


Noise Levels at Noise Measurement Site LT-1
~185 feet West of the Centerline of Redwood Highway, Mill Valley, CA
Thursday, September 29, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 70 dBA
FIGURE A3



Noise Levels at Noise Measurement Site LT-1
~185 feet West of the Centerline of Redwood Highway, Mill Valley, CA
Friday, September 30, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)

FIGURE A4



Noise Levels at Noise Measurement Site LT-2
~55 feet North of the Centerline of E Blithedale Avenue, Mill Valley, CA
Tuesday, September 27, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)

FIGURE A5

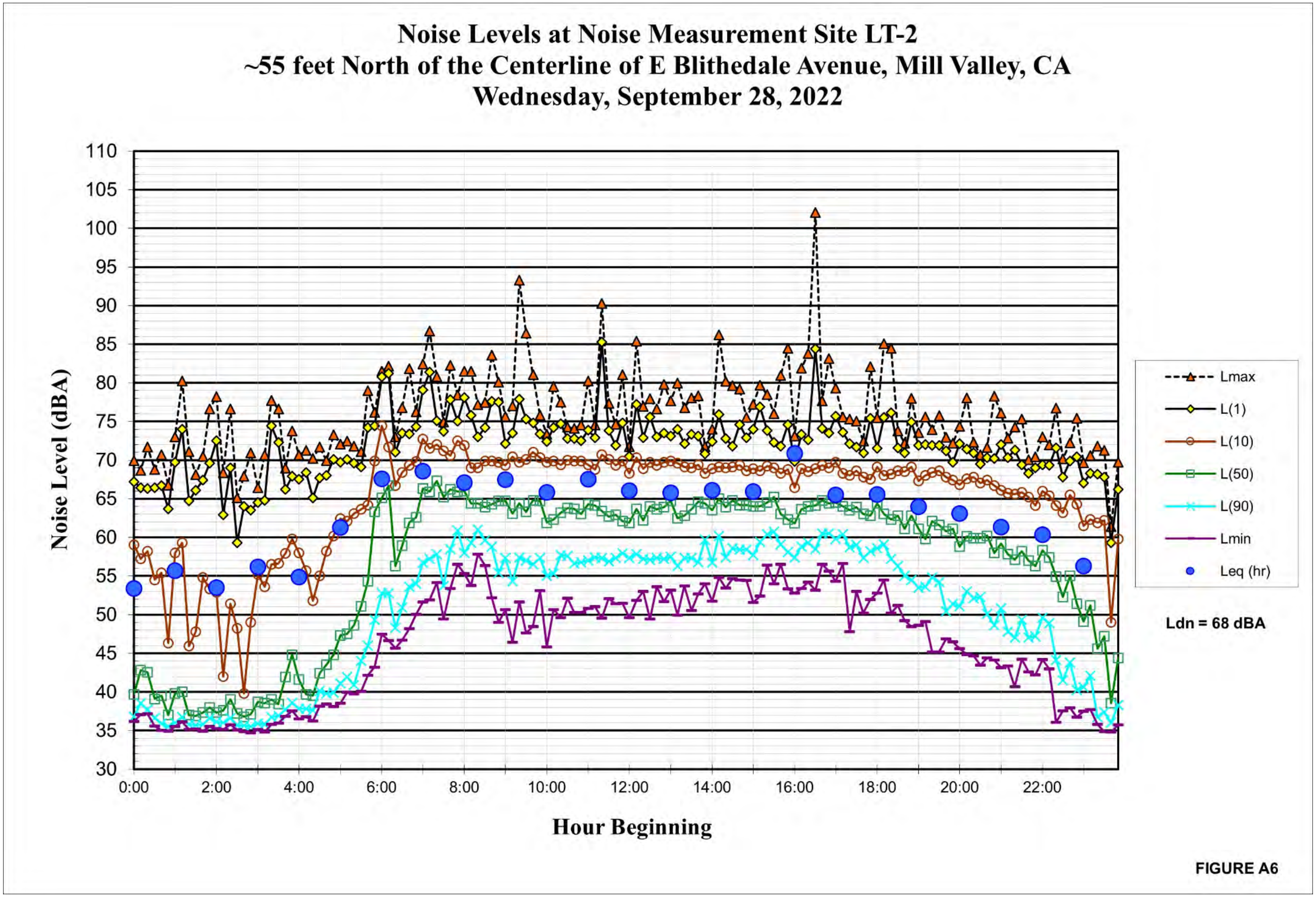
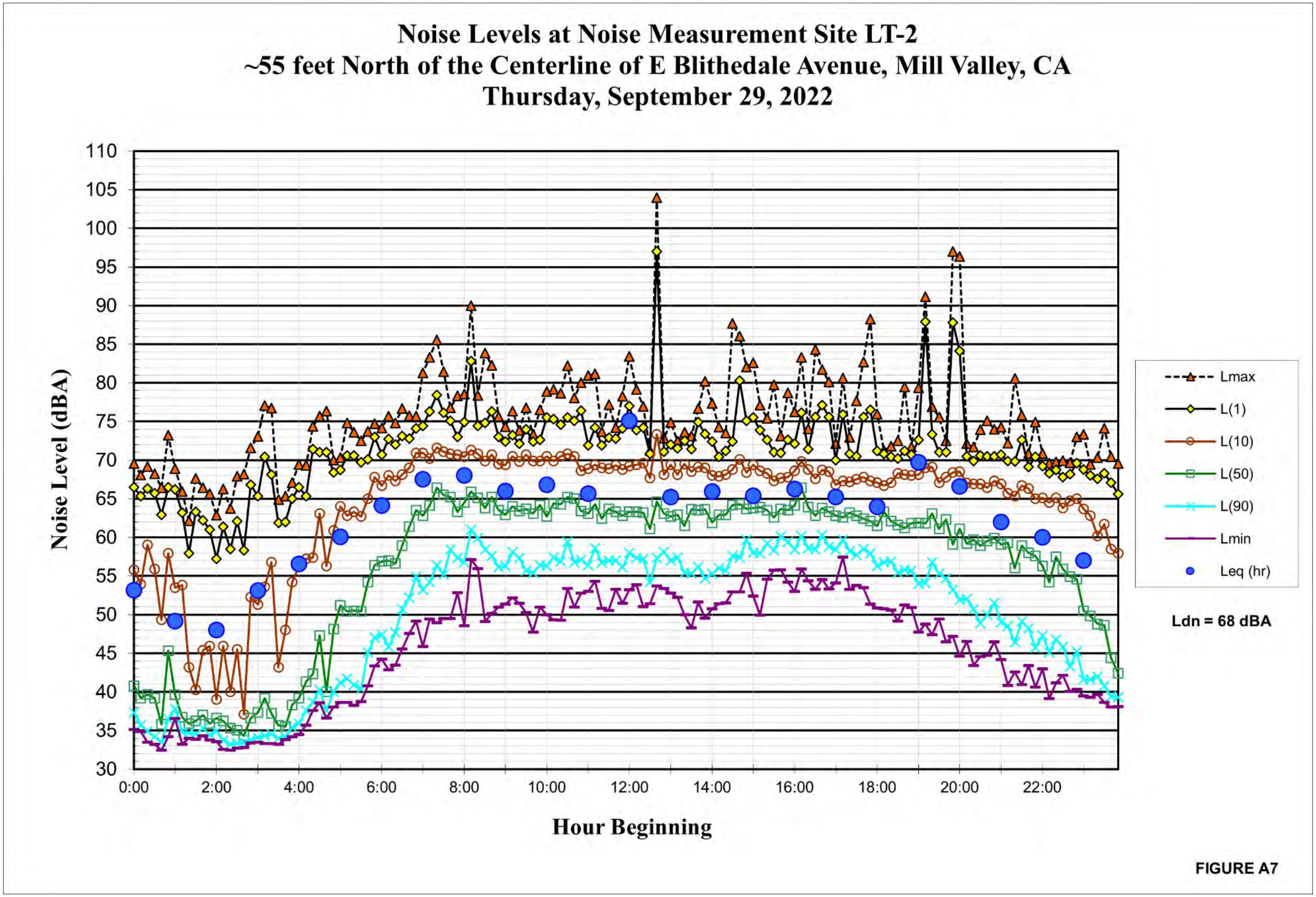
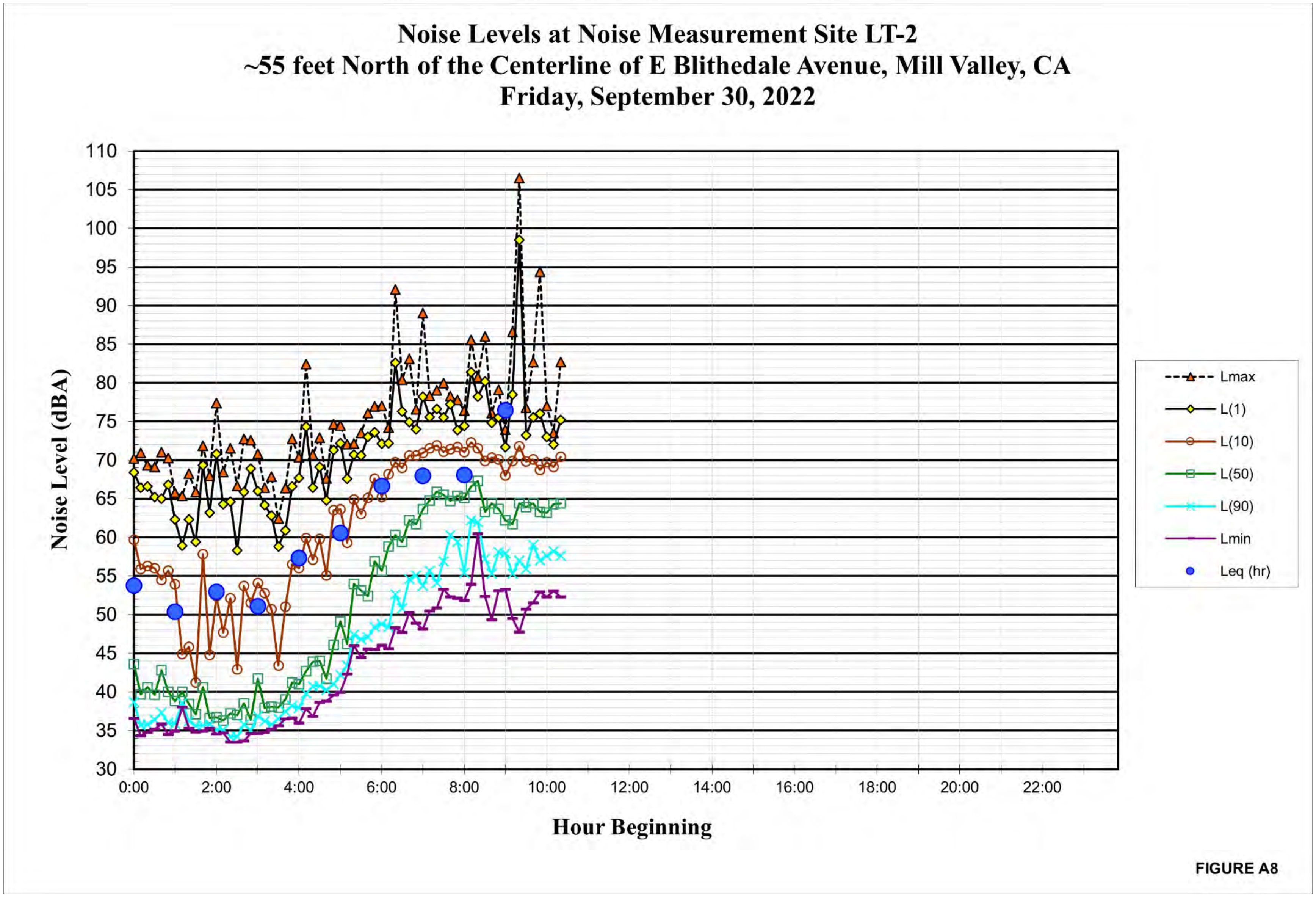

Noise Levels at Noise Measurement Site LT-2
~55 feet North of the Centerline of E Blithedale Avenue, Mill Valley, CA
Wednesday, September 28, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 68 dBA

FIGURE A6



Noise Levels at Noise Measurement Site LT-2
~55 feet North of the Centerline of E Blithedale Avenue, Mill Valley, CA
Thursday, September 29, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 68 dBA

FIGURE A7


Noise Levels at Noise Measurement Site LT-2
~55 feet North of the Centerline of E Blithedale Avenue, Mill Valley, CA
Friday, September 30, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
FIGURE A8

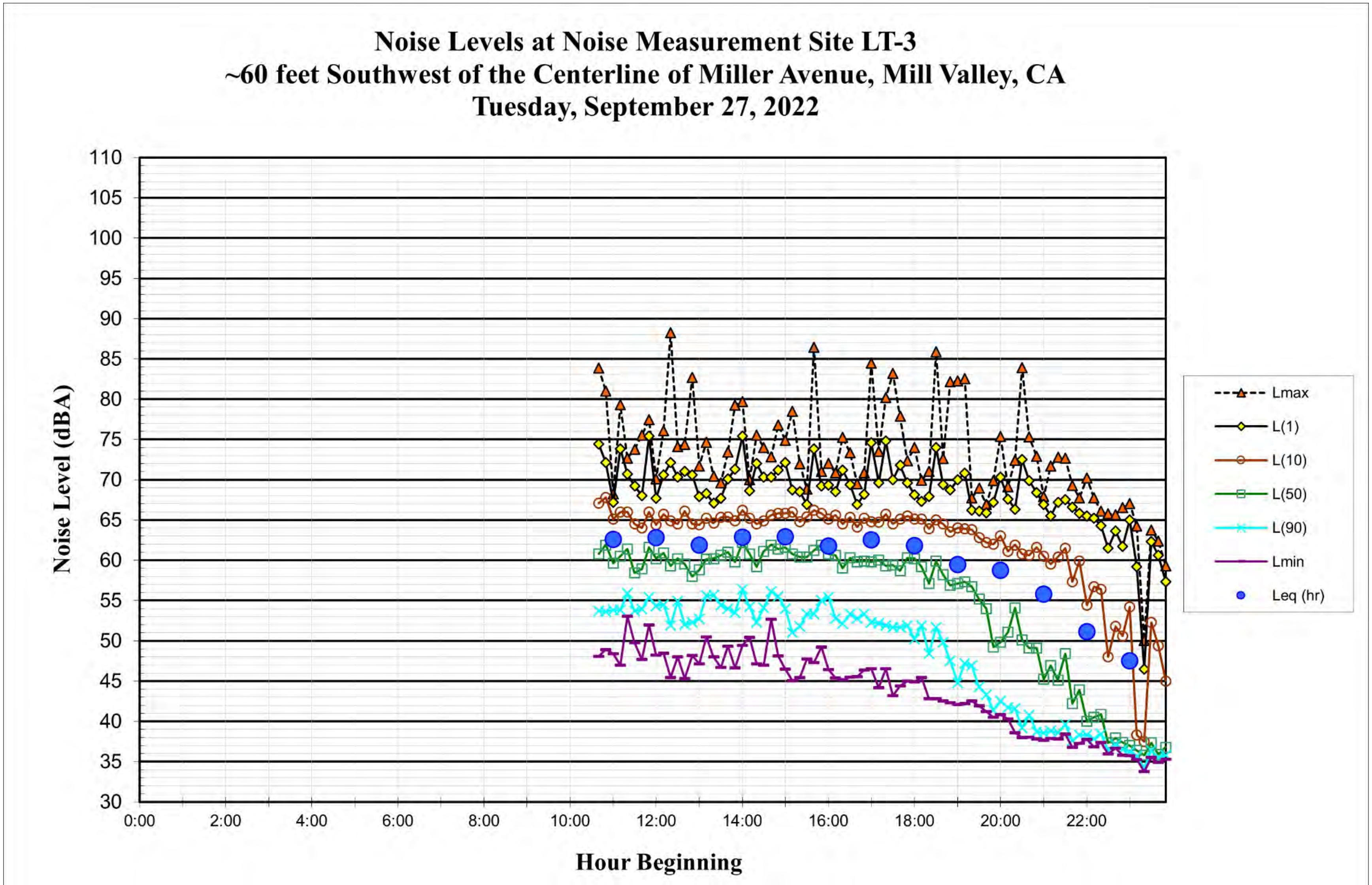

Noise Levels at Noise Measurement Site LT-3
~60 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Tuesday, September 27, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)

FIGURE A9

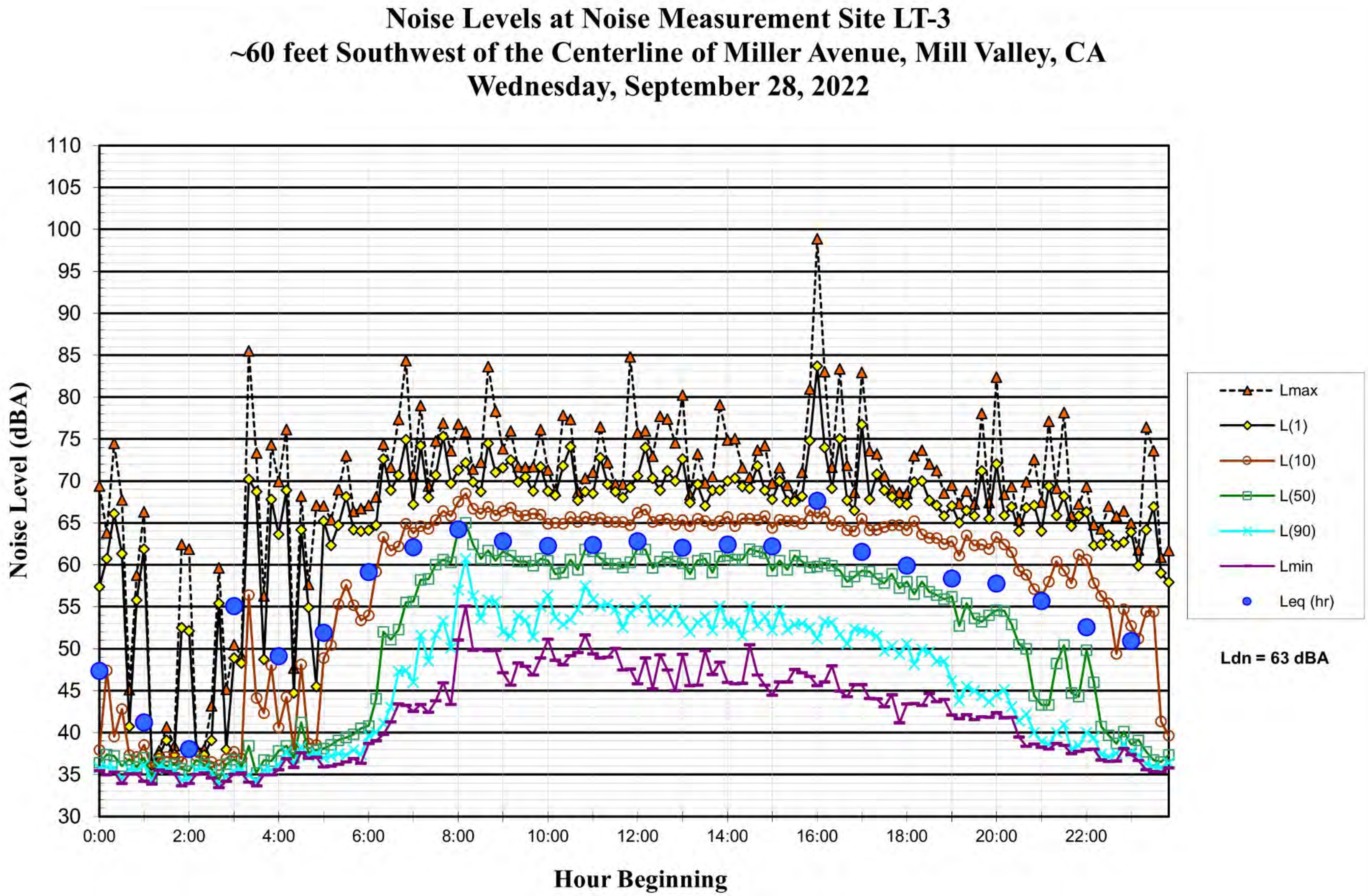
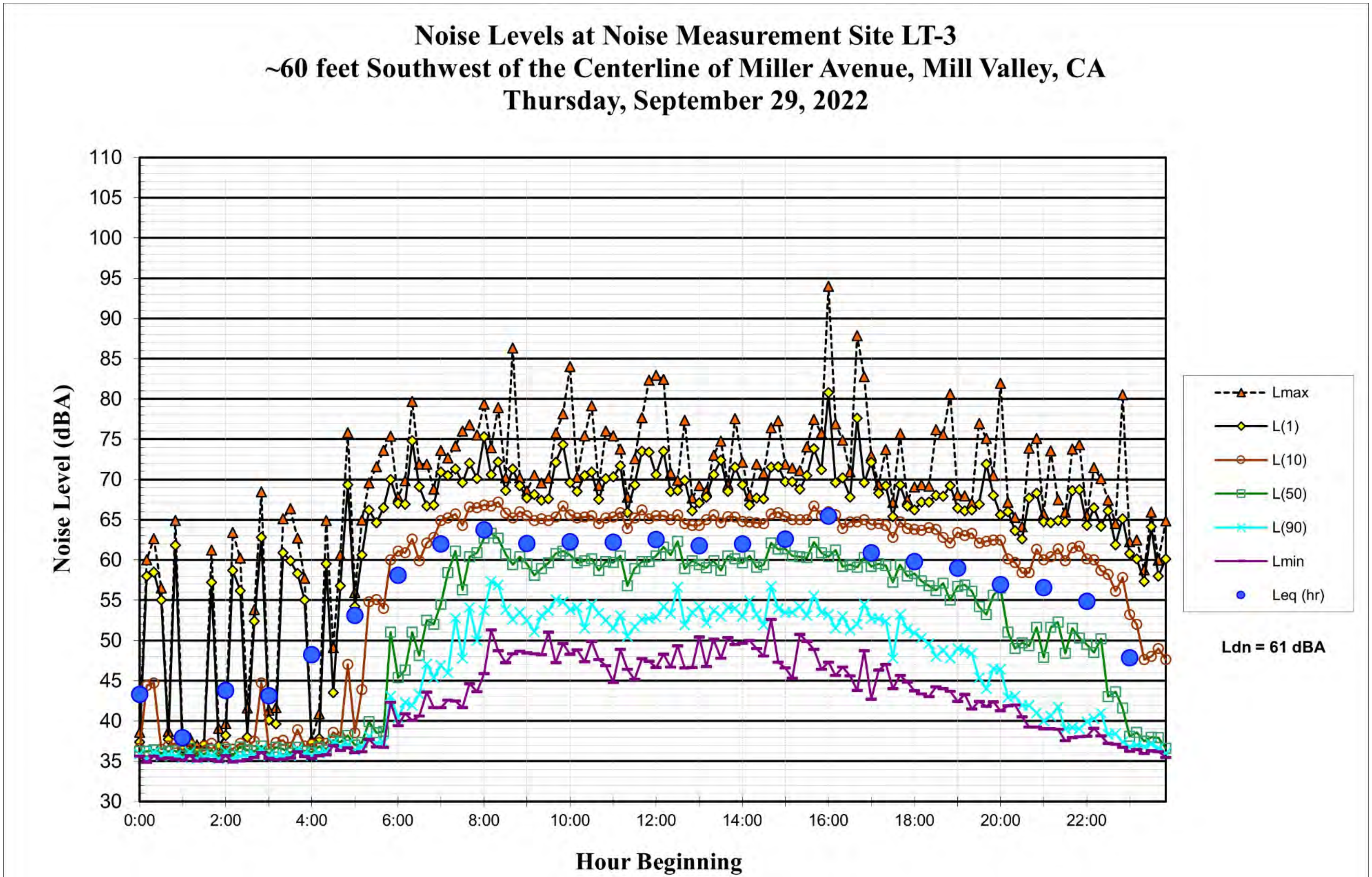
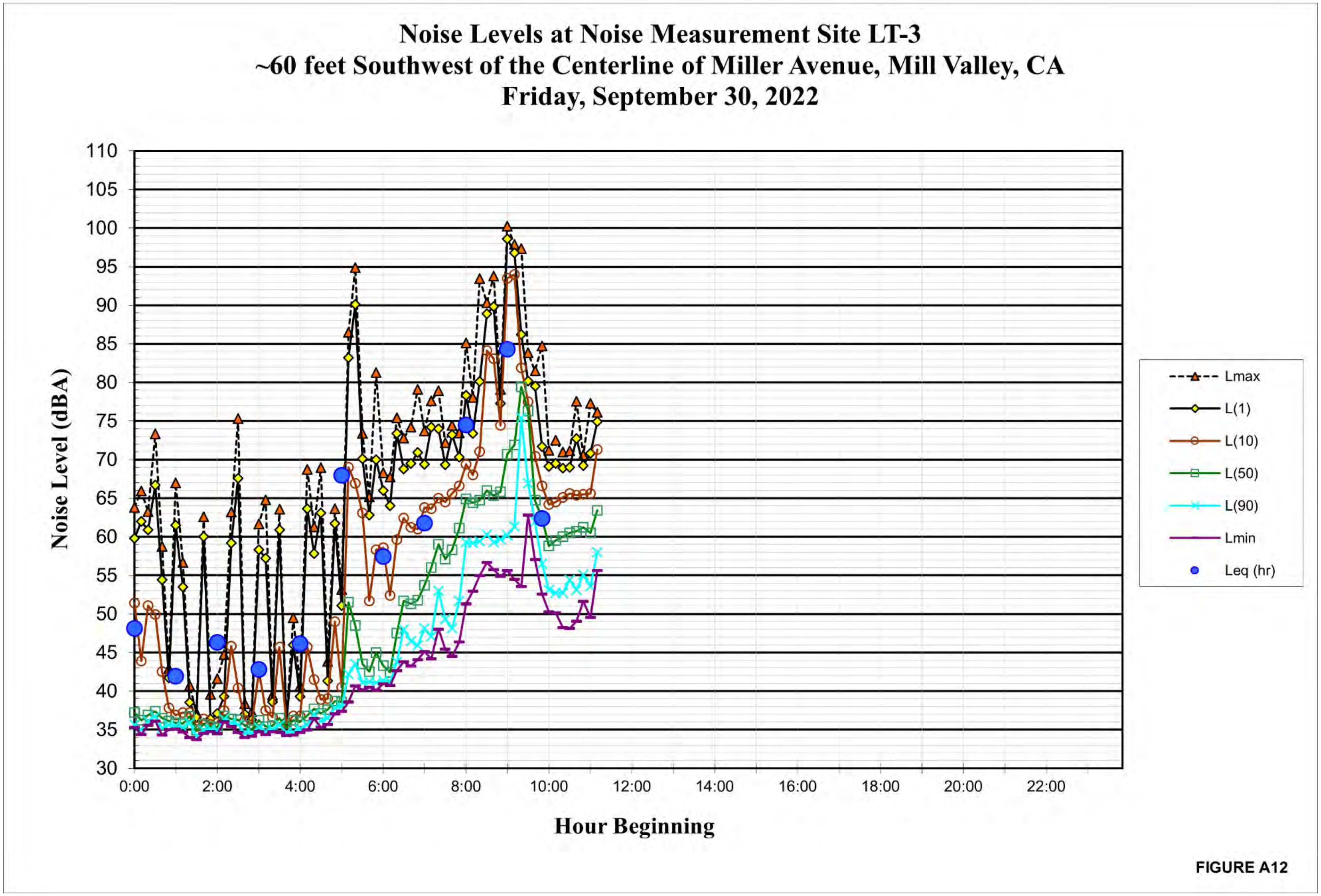

Noise Levels at Noise Measurement Site LT-3
~60 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Wednesday, September 28, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 63 dBA

FIGURE A10



Noise Levels at Noise Measurement Site LT-3
~60 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Thursday, September 29, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 61 dBA

FIGURE A11



Noise Levels at Noise Measurement Site LT-3
~60 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Friday, September 30, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
FIGURE A12

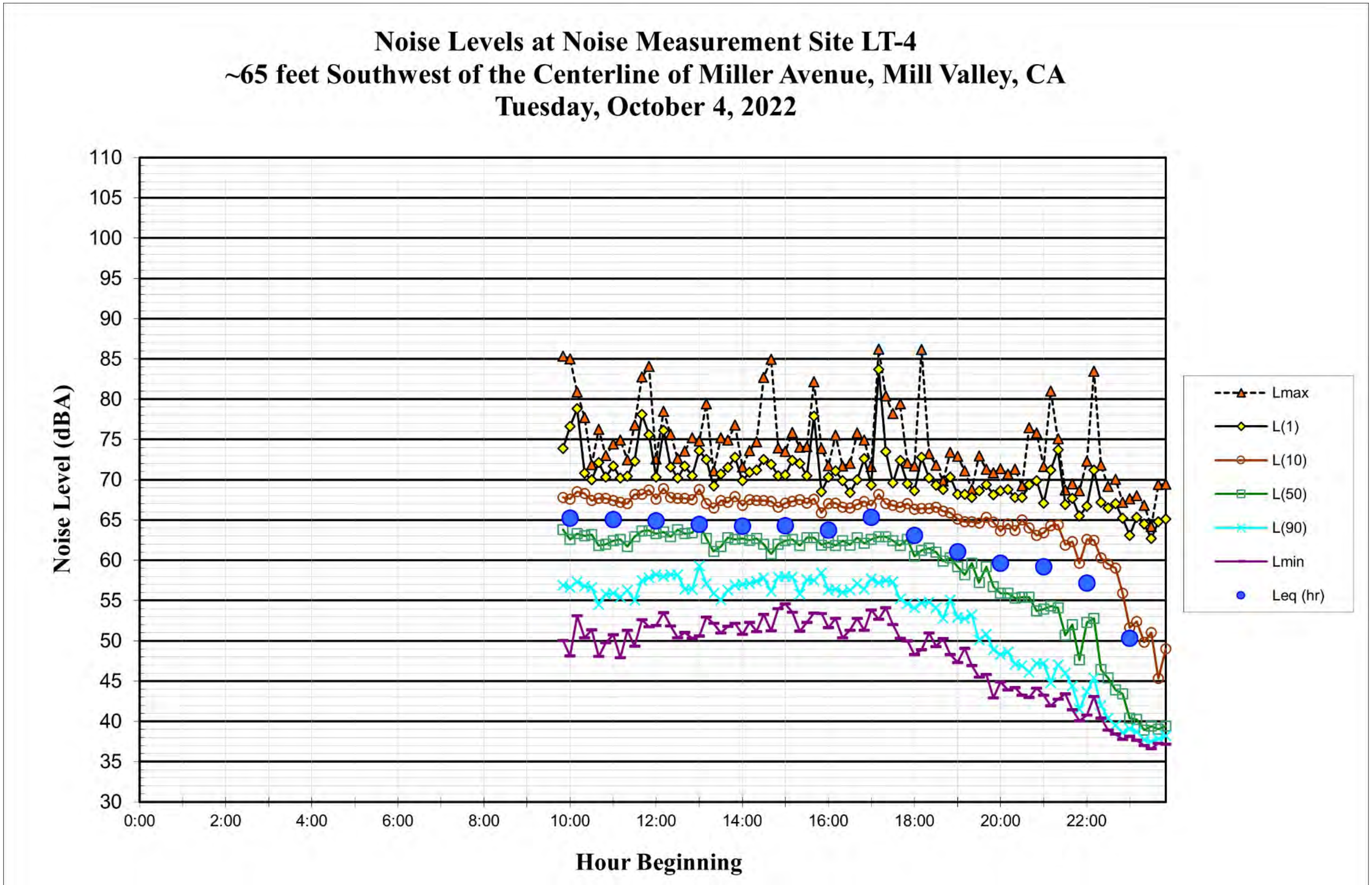
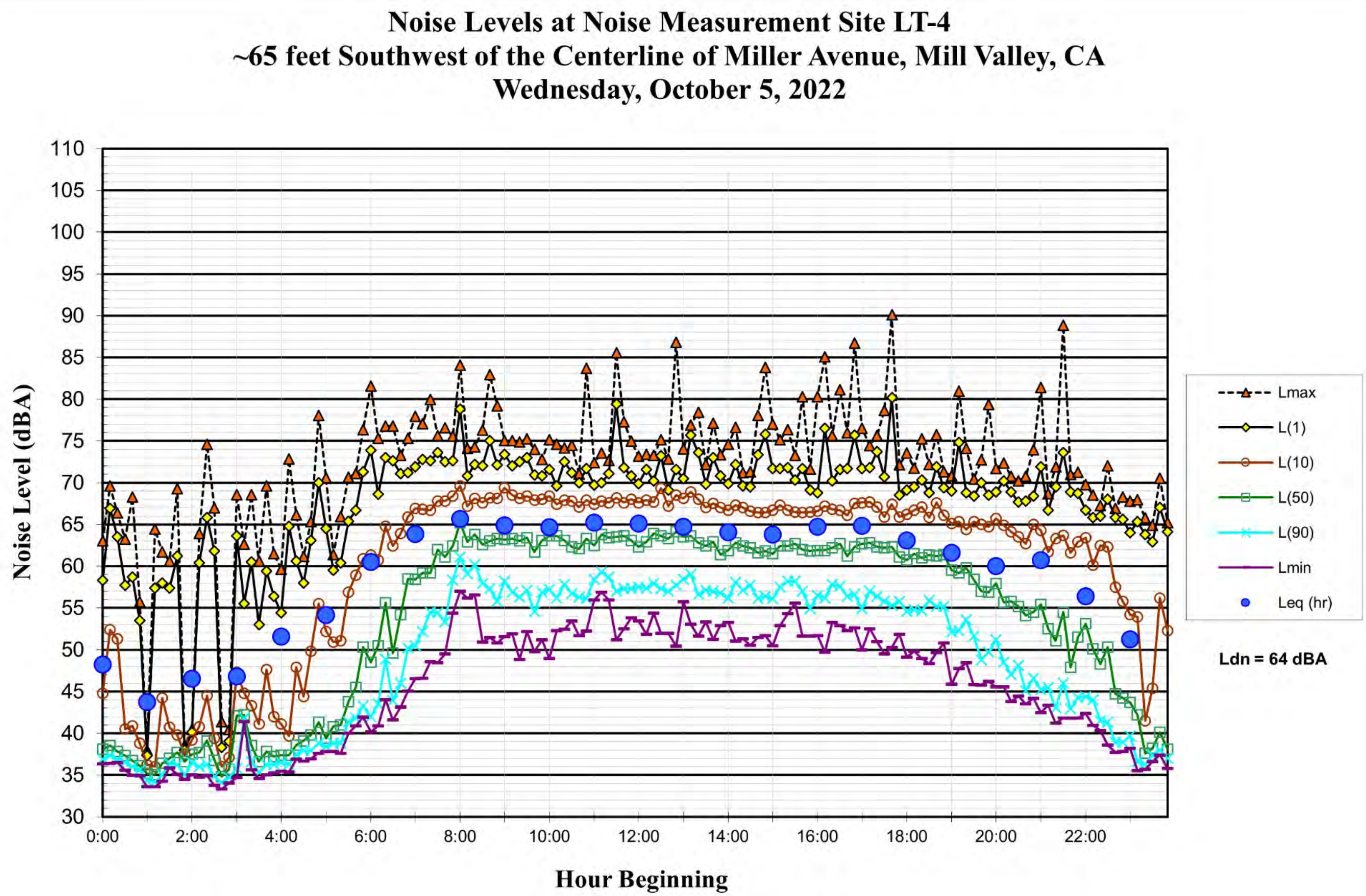
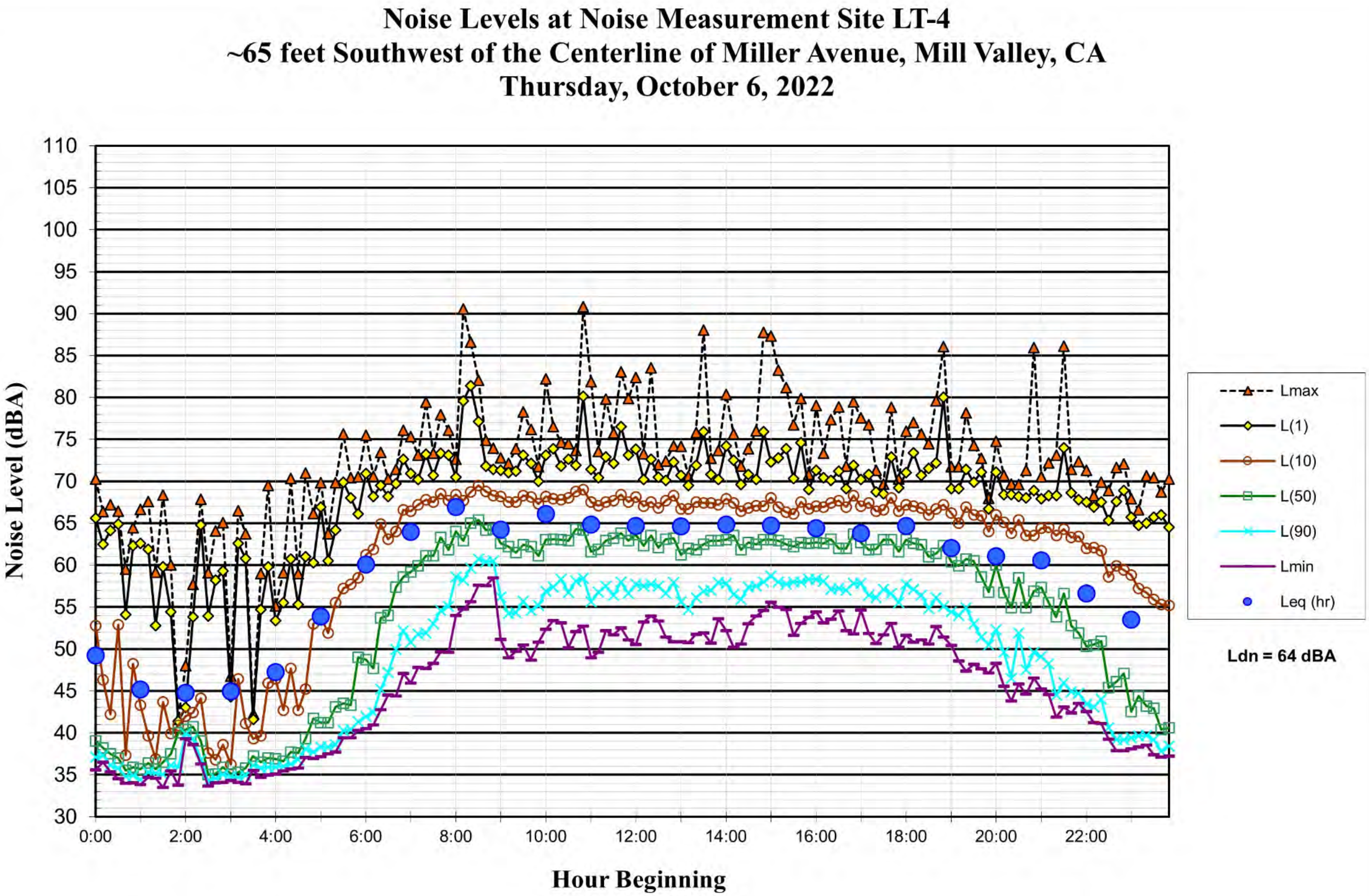

Noise Levels at Noise Measurement Site LT-4
~65 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Tuesday, October 4, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)

FIGURE A13



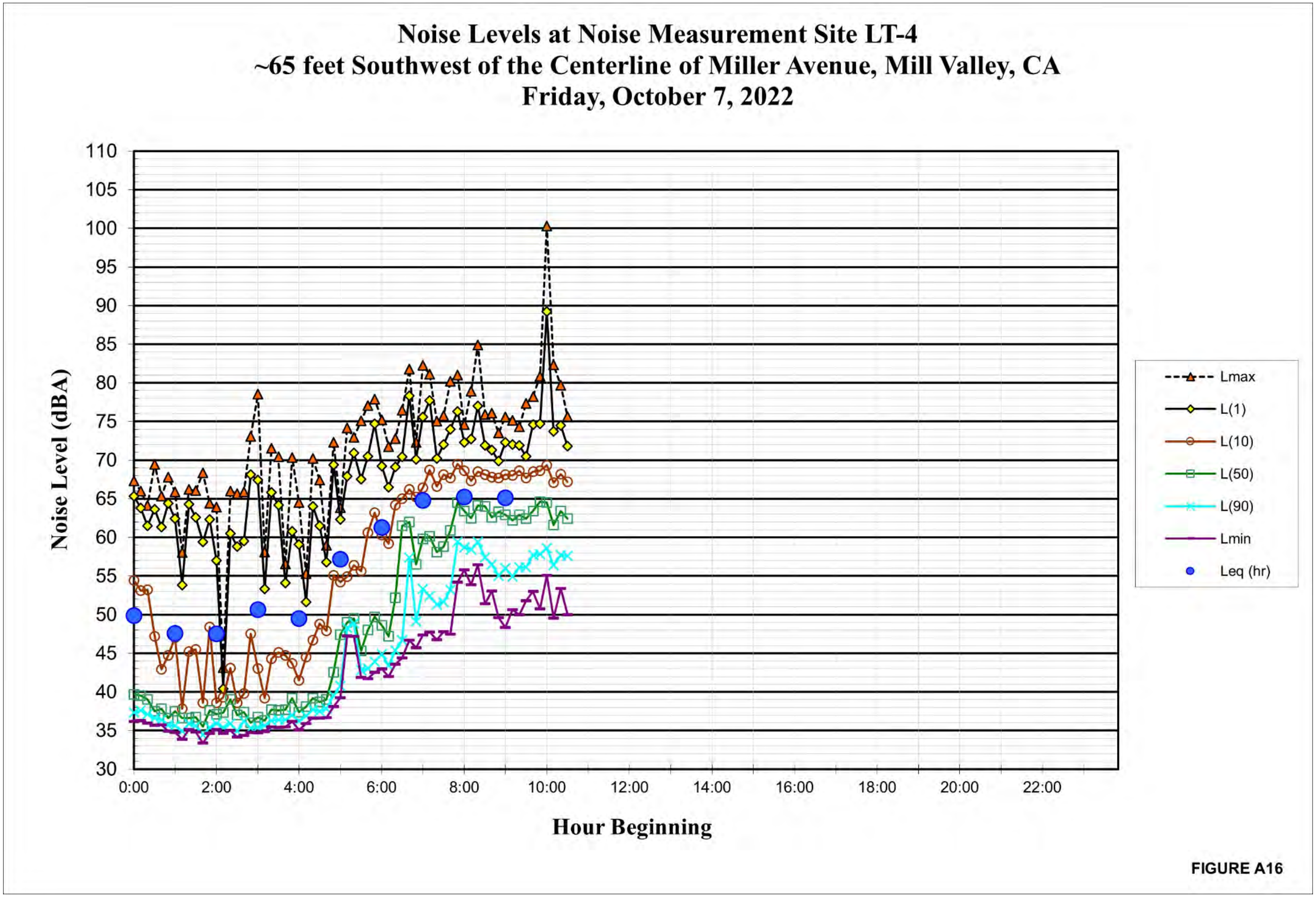
Noise Levels at Noise Measurement Site LT-4
~65 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Wednesday, October 5, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 64 dBA

FIGURE A14



Noise Levels at Noise Measurement Site LT-4
~65 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Thursday, October 6, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 64 dBA

FIGURE A15


Noise Levels at Noise Measurement Site LT-4
~65 feet Southwest of the Centerline of Miller Avenue, Mill Valley, CA
Friday, October 7, 2022
Noise Level (dBA)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
FIGURE A16

Mill Valley Housing Element Update
Transportation (VMT) Analysis

F
APPENDIX

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Mill Valley Housing Element Update

Transportation Analysis

Prepared for:

EMC Planning Group

October 26, 2022

Hexagon Transportation Consultants, Inc.
Hexagon Office: 100 Century Center Court, Suite 501
San Jose, CA 95112
Phone: 408.971.6100
Hexagon Job Number: 22SJ05
Client Name: Teri Wissler Adam, EMC Planning Group

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Executive Summary

This report presents the results of the transportation analysis (TA) conducted for the proposed Mill Valley Housing Element Update (HEU) project. The City is updating its General Plan Housing Element as mandated by State law for the Regional Housing Needs Assessment (RHNA) 2022-2031 planning cycle. For analysis purposes, this amendment is projected to result in an increase in Mill Valley's housing by 1,156 dwelling units.

The potential impacts of the HEU were evaluated in accordance with the standards and methodologies set forth by the City of Mill Valley.

CEQA Transportation Analysis

Vehicle Miles Traveled (VMT) Impact

The proposed residential use would generate a VMT level (14.5 per resident) greater than the threshold (13.4 per capita), therefore the HEU would result in a significant transportation impact on VMT. Therefore, mitigation measures for the HEU are required to reduce VMT to below the threshold.

Mitigation:

It is recommended that the HEU include travel demand management measures, including but not limited to the measures below, which have been identified as potentially VMT reducing in the California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021).

- Unbundle parking costs (i.e. sell or lease parking separately from the housing unit).
- Provide car-sharing, bike sharing, or scooter sharing programs.
- Provide bicycle parking.
- Subsidize transit passes for residents.
- Integrate affordable and below market rate housing.
- Provide trip planning resources.
- Provide pedestrian network improvements.
- Construct or improve bike facilities.
- Implement a school pool program

A large number of the HEU sites propose single family homes or multi-family developments with a small number of units. TDM measures are typically not applicable to single-family homes and have low effectiveness for smaller developments and owner-occupied units. It is recommended that individual projects in the HEU evaluate their VMT impacts and incorporate VMT reduction measures that are feasible for the individual project circumstance (including ownership status). It is not known whether TDM measures would be sufficient to entirely offset the VMT impact of the HEU. Therefore, the VMT impact analysis for the HEU would conservatively remain significant and unavoidable with mitigation.

Local Transportation Analysis

Project Trip Generation

Based on the ITE trip generation rates and applicable reductions, it is estimated that the proposed project would generate 6,905 new daily trips, including 373 net new trips (31 net new inbound and 342 net new outbound) during the AM peak hour, 311 net new trips (187 net new inbound and 124 net new outbound) during the mid-afternoon peak hour, and 512 net new trips (363 net new inbound and 149 net new outbound) during the PM peak hour.

Intersection Traffic Operations

Based on the intersection level of service analysis, all signalized study intersections are operating at acceptable levels of service during the AM, mid-afternoon, and PM peak hours of traffic under existing conditions and would continue to do so under cumulative conditions. The results of the analysis show that the added project trips would not cause an adverse operational effect, as defined by Mill Valley, at any of the signalized study intersections.

Three unsignalized study intersections meet peak hour signal warrants and operate at an LOS F under project conditions resulting in an adverse effect under existing plus project and cumulative plus project scenarios. Proposed improvements at the unsignalized study intersections are described below:

Carmelita Avenue & E. Blithedale Avenue Intersection

Restriping the southbound approach with a left turn lane and a right turn lane would reduce the delay for the southbound approach. However, it would continue to experience long delays equivalent to LOS F under all study scenarios, and the intersection would continue to be adversely affected under project conditions. Additional right-of-way would be needed to construct the additional turn lane.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS A under all scenarios.

Montford Avenue/La Goma Street & Miller Avenue Intersection

The adverse effect at this intersection could be offset by the construction of a two-lane roundabout with a shared left-through lane and a shared through-right lane at the east and west approaches and a single shared lane at the north and south approaches. Right-of-way acquisition would be required to construct the roundabout or adjacent properties would be required to dedicate right-of-way when they redevelop. With a two-lane roundabout, the intersection would operate at an LOS A under all scenarios. Note that with a single lane roundabout, the LOS would remain an unacceptable E during at least one peak hour.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS B under all scenarios.

Reed Street/Valley Circle & Miller Avenue Intersection

Restriping the northbound approach with a left turn lane and a right turn lane would reduce the delay. However, it would continue to experience long delays equivalent to LOS F under all study scenarios, and the intersection would continue to be adversely affected under project conditions. Additional right-of-way would be needed to include an additional turn lane.

The adverse effect at this intersection could be offset by the construction of a two-lane roundabout with a shared left-through lane and a shared through-right lane at the east and west approaches and a single shared lane at the north and south approaches. With the roundabout, the intersection would operate at an LOS A under all scenarios. Note that a single lane roundabout would result in LOS E operations during at least one peak hour.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS B under all scenarios.

1. Introduction

This report presents the results of the transportation analysis (TA) conducted for the proposed Mill Valley Housing Element Update (HEU) project. The City is updating its General Plan Housing Element as mandated by State law for the Regional Housing Needs Assessment (RHNA) 2022-2031 planning cycle. For analysis purposes, this amendment is projected to result in an increase in Mill Valley's housing by 1,156 dwelling units (hereafter known as 'project'). Figure 1 shows the location of the proposed housing sites in the City. Table 1 shows the breakdown of the potential increase in units.

Table 1
Housing Opportunity Sites Potential Development

Site Inventory	Total Units (Maximum based on Density Standard)
Vacant Single-Family Zoned Sites	88
Projected SB 9 Lot Splits	36
City-Owned Site (1 Hamilton)	50
Underutilized Sites: Commercial and Multi-Family Zoned Sites Under ½ acre with Housing Overlay	294
Opportunity Sites: Commercial Zoned Sites over ½ acre with Housing Overlay	492
Office Conversions with Housing Overlay	173
300 East Blithedale Rezoning	8
Presidio Neigborhood Rezoning	15
Total Projected Units	**1,156**

Scope of Study

The purpose of the study is to identify potential transportation impacts related to the proposed HEU. Per California Senate Bill 743 (SB 743) and CEQA Guidelines, the study includes a vehicle miles traveled (VMT) analysis. The study also includes a local transportation analysis that evaluates potential transportation effects of the HEU in accordance with the standards and methodologies set forth by the City of Mill Valley.

CEQA VMT Analysis

In accordance with Senate Bill (SB) 743, an analysis of the proposed increase in housing's potential impacts on VMT was conducted as part of the environmental analysis for the project. The City of Mill Valley has not formally adopted a VMT policy, therefore, the VMT thresholds for this project were based on the Governor's Office of Planning and Research (OPR)'s recommendations. Consistent with OPR guidelines, 85 percent of the existing County average daily VMT per resident was assumed as the VMT threshold of significance. Average VMT per resident for the HEU zones was reported from the Transportation Authority of Marin's Demand Model (TAMDM), and the HEU average VMT per resident was compared to the Marin County average.

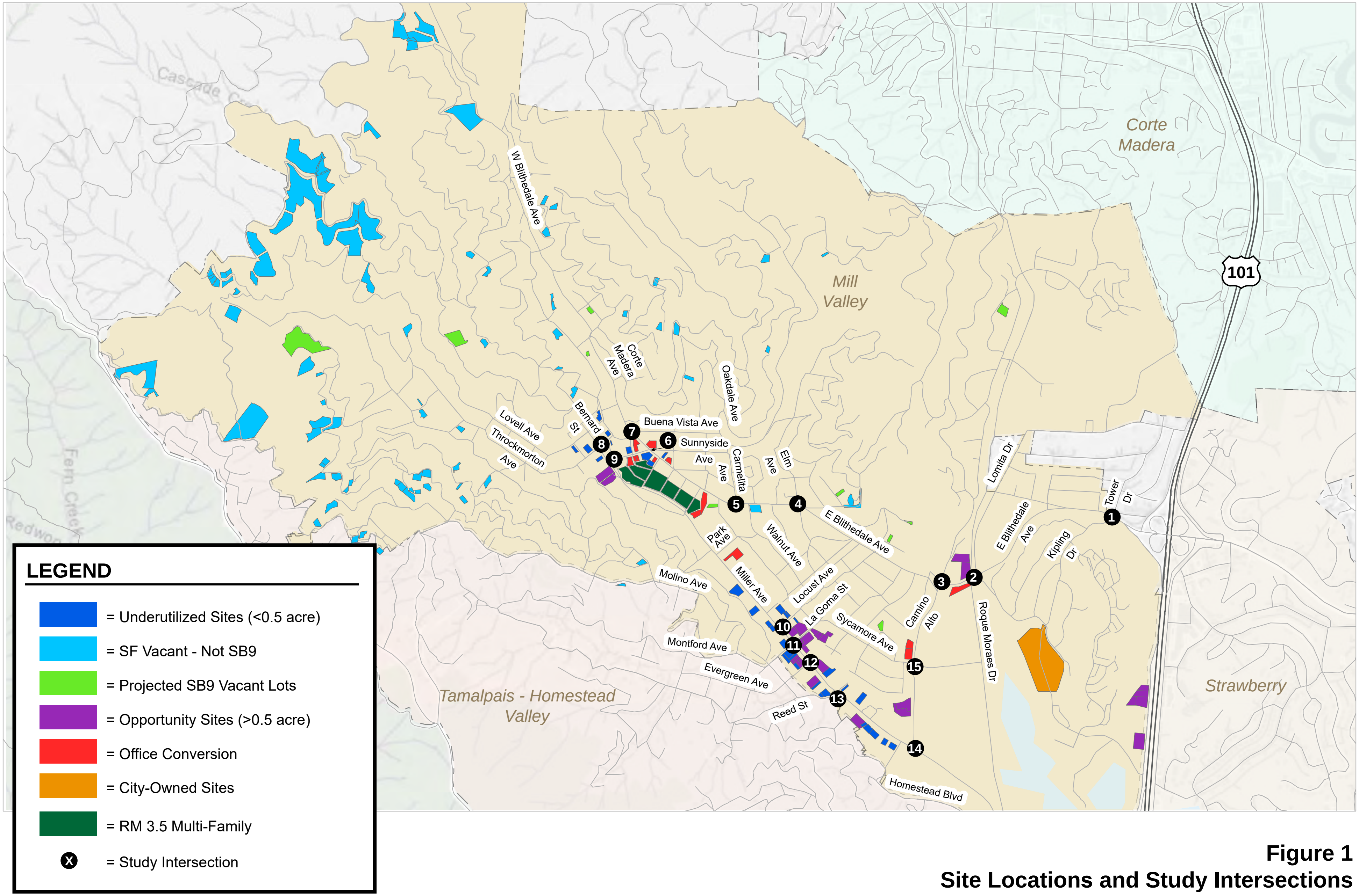


Figure 1
Site Locations and Study Intersections

Local Transportation Analysis (LTA)

The LTA supplements the VMT analysis by identifying potential adverse traffic operational effects of the proposed housing sites that may arise due to the new development. This includes operations at key intersections and freeway corridors providing access to and through the study area.

The intersection operations analysis is based on the AM (7:00 AM and 9:00 AM), mid-afternoon (MD) (2:00 PM to 4:00 PM), and PM (4:00 PM and 6:00 PM) peak-hour level of service for six signalized intersections and nine unsignalized intersections in the vicinity of the HEU sites as illustrated in Figure 1. The list of study intersections and time-periods were determined in consultation with the City staff. The following intersections were identified for analysis:

1. E. Blithedale Avenue and Tower Drive/Kipling Drive
2. E. Blithedale Avenue and Lomita Drive/Roque Moraes Drive
3. E. Blithedale Avenue and Camino Alto
4. E. Blithedale Avenue and Elm Avenue
5. E. Blithedale Avenue and Carmelita Avenue (unsignalized)
6. E. Blithedale Avenue and Sunnyside Avenue (unsignalized)
7. E. Blithedale Avenue and Throckmorton Avenue (unsignalized)
8. Miller Avenue/Bernard Street and Throckmorton Avenue (unsignalized)
9. Miller Avenue and Sunnyside Avenue (unsignalized)
10. Miller Avenue and Locust Avenue (unsignalized)
11. Miller Avenue and La Goma Street/Montford Avenue (unsignalized)
12. Miller Avenue and Evergreen Avenue (unsignalized)
13. Miller Avenue and Valley Circle/Reed Street (unsignalized)
14. Miller Avenue and Camino Alto
15. Camino Alto and Sycamore Avenue

Traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing traffic volumes at the study intersections were based on pre-pandemic traffic counts conducted in 2012 and and counts collected in 2022 for other traffic studies (see Appendix A).
- ***Existing Plus Project Conditions*.** Existing plus project traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the proposed new development. Existing plus project conditions were evaluated relative to existing conditions to determine potential adverse project effects.
- ***Cumulative Conditions.*** The cumulative scenario assumed a year 2031 horizon, which represents the RHNA planning cycle. An annual growth factor of 0.25 percent from the City's mobility plan was applied to all study intersections.
- ***Cumulative Plus Project Conditions.*** Cumulative plus project traffic volumes were estimated by adding to cumulative traffic volumes the additional traffic generated by the project. Cumulative plus project conditions were evaluated relative to cumulative conditions to determine potential adverse project effects.

Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic conditions at the study intersections and the potential adverse operational effects due to the project. It includes descriptions of the data requirements, the analysis methodologies, the applicable intersection level of service standards, and the criteria used to determine adverse effects on intersection operations.

Data Requirements

The data required for the analysis were obtained from previous traffic studies, new traffic counts, the City of Mill Valley, the TAM VMT webmap, and Google Earth. The following data were collected from these sources:

- Existing traffic volumes
- Lane configurations
- Signal timing and phasing

Level of Service Analysis Methodology and Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The analysis methods are described below.

Signalized Intersections

The City of Mill Valley utilizes SYNCHRO software and the *Highway Capacity Manual (HCM), 6th Edition* methodology to evaluate intersection operations. The HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Control delay is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The correlation between average delay and level of service is shown in Table 2. In the City of Mill Valley, the level of service standard for signalized intersections is LOS D, with the exception of the E. Blithedale Avenue/Camino Alto intersection with LOS E+ (average delay of between 55 and 65 seconds).

Table 2
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition*, p.10-16.

Unsignalized Intersections

The study includes the analysis of nine unsignalized intersections. Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, delays and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate. The City of Mill Valley does not have an adopted level of service standard for unsignalized intersections.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For two-way or T-intersections, the level of service is reported based on the delay for the worst movement. The level of service definitions for unsignalized intersections is shown in Table 3. The City of Mill Valley has not adopted a level of service standard for unsignalized intersections. An LOS E standard was assumed for the unsignalized intersections.

The unsignalized study intersections were also analyzed on the basis of the Peak-Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the California Manual on Uniform Traffic Control Devices (MUTCD), 2014 Edition.

Table 3
Unsignalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *Highway Capacity Manual, 6th Edition* p17-2.

Adverse Operational Effects on Intersections

For this analysis, the criteria used to determine an adverse effect on intersections are based on the City of Mill Valley's Level of Service standards. The City's General Plan specifies the following Policy and Implementation Program related to traffic operations at intersections:

- Policy **M.9-7**: Maintain a motor vehicle level of service (LOS) standard of "E+" at the intersection of East Blithedale Avenue and Camino Alto. LOS E+ means an average motorist delay of between 55 and 65 seconds during the morning (AM), after school, and evening (PM) one-hour peak periods on weekdays and during peak periods on weekends.
- Policy **M.9-8**: Maintain a motor vehicle level of service (LOS) standard of "D" at all other signalized intersections in the City of Mill Valley.

The City of Mill Valley has not adopted an adverse effect criterion for unsignalized intersections. For the purpose of this analysis, the project is assumed to cause an adverse effect at an unsignalized intersection if it operates at LOS F and meets the signal warrant under project conditions.

Report Organization

This report has a total of four chapters. Chapter 2 describes existing transportation conditions including the existing roadway network, transit service, and bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the project VMT impact analysis. Chapter 4 describes the local transportation analysis including operations of study intersections, the methods used to estimate project-generated traffic and the project's effects on the study intersections.

2. Existing Transportation Conditions

This chapter describes the existing conditions of the transportation system within Mill Valley. It describes the roadway network, transit service, and pedestrian and bicycle facilities. The analysis of existing intersection operations is included as part of the local transportation analysis (see Chapter 4).

Existing Roadway Network

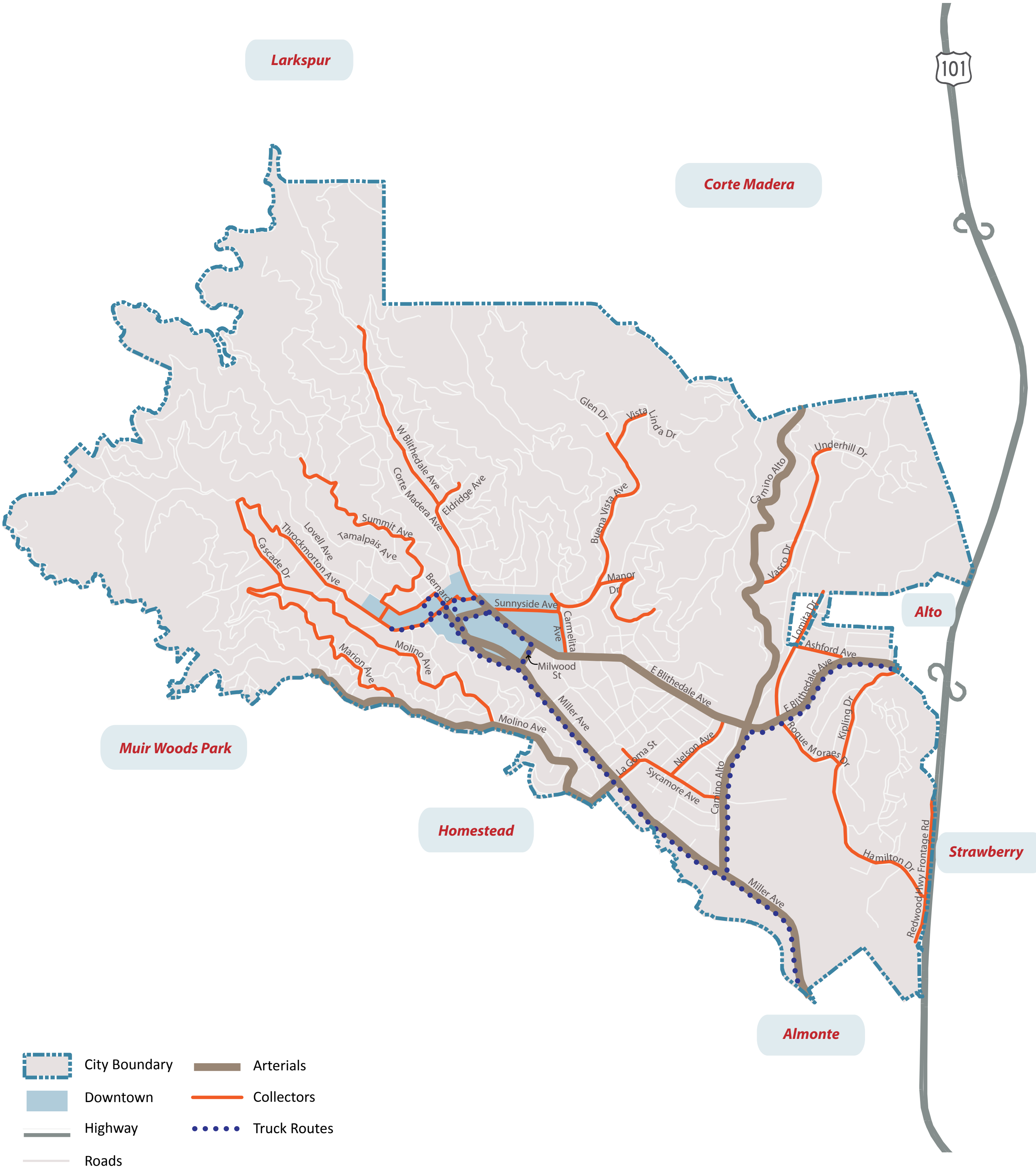
Regional and local roadways serving the City of Mill Valley where housing is proposed in the HEU are described below.

Regional Access

US 101 is an eight-lane (3 mixed lane and 1 HOV lane in each direction) north-south freeway that extends north through San Francisco and south through Gilroy. Ramps connect to Mill Valley via Tiburon Boulevard/Blithedale Avenue and the Redwood Highway Frontage Road.

Local Access

Local access in the City is provided by arterials and collectors. These streets provide access to the HEU sites. The roadway network serving Mill Valley, including classifications from the 2040 General Plan, is shown in Figure 2.



Source: Mill Valley General Plan 2040, Mobility Element

Figure 2
Roadway Classifications

HEXAGON

NORTH
Not to Scale

Existing Pedestrian and Bicycle Facilities

Bicycle Facilities

Bicycle facilities in Mill Valley include bike paths, bike lanes, and bike routes. Bike paths (Class I facilities) separate pedestrians and bicyclists from motor vehicle traffic; however, pedestrians and bicyclists may have to share the path with other active transportation users. Bike lanes (Class II facilities) are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes (Class III facilities) are roadways shared between bicycles and vehicles. Bike routes are often designated for use by bicycles with "sharrow" pavement markings and signage. The existing bicycle facilities within the study area are described below and are shown on Figure 3.

Class I bike paths in the City include the Mill Valley-Sausalito Pathway between the City Limits and Vasco Court, Bayfront Park Pathway between the Mill Valley-Sausalito Pathway and Hamilton Drive, Camino Alto Sidepath between Sycamore Avenue and Mill Valley Recreation driveway, Edna Maguire Spur Pathway between Mill Valley-Sausalito Pathway and Lomita Drive, Freeman Park Pathway between Nelson Avenue and Ryan Avenue, Hamilton Drive Pathway between Bayfront Park Pathway and Shelter Bay Avenue, and Sycamore Avenue Pathway between Camino Alto and Mill Valley-Sausalito Pathway.

Striped bike lanes (Class II bikeway) are present along the following roadways in the City:

- Camino Alto between Chapman Drive and E. Blithedale Avenue
- Lomita Drive between Edna Maguire Elementary and the City Limit
- Miller Avenue between Sunnyside Avenue and Valley Circle
- westbound Miller Avenue between Willow Street and Locust Avenue
- Miller Avenue between Evergreen Avenue and Almonte Boulevard

Bike routes (Class III bikeway) are present along the following roadways in the City:

- Ashford Avenue between Lomita Drive and E. Blithedale Avenue
- El. Blithedale Avenue between Ashford Avenue and Kipling Drive/Tower Drive
- Hamilton Drive between Shelter Bay Avenue and Redwood Highway Frontage Road
- Janes Street between Molino Avenue and Montford Avenue
- Meadow Drive between Ashford Avenue and City Limit
- Miller Avenue between Park Avenue and Valley Circle
- Locust Avenue between Miller Avenue and Sycamore Avenue
- Montford Avenue between Miller Avenue and Janes Avenue
- Molino Avenue between Janes Avenue and Montford Avenue
- Redwood Highway Frontage Road between Hamilton Drive and City Limit
- Sycamore Avenue between Locust Avenue and Camino Alto
- La Goma Street between Miller Avenue and Sycamore Avenue

Pedestrian Facilities

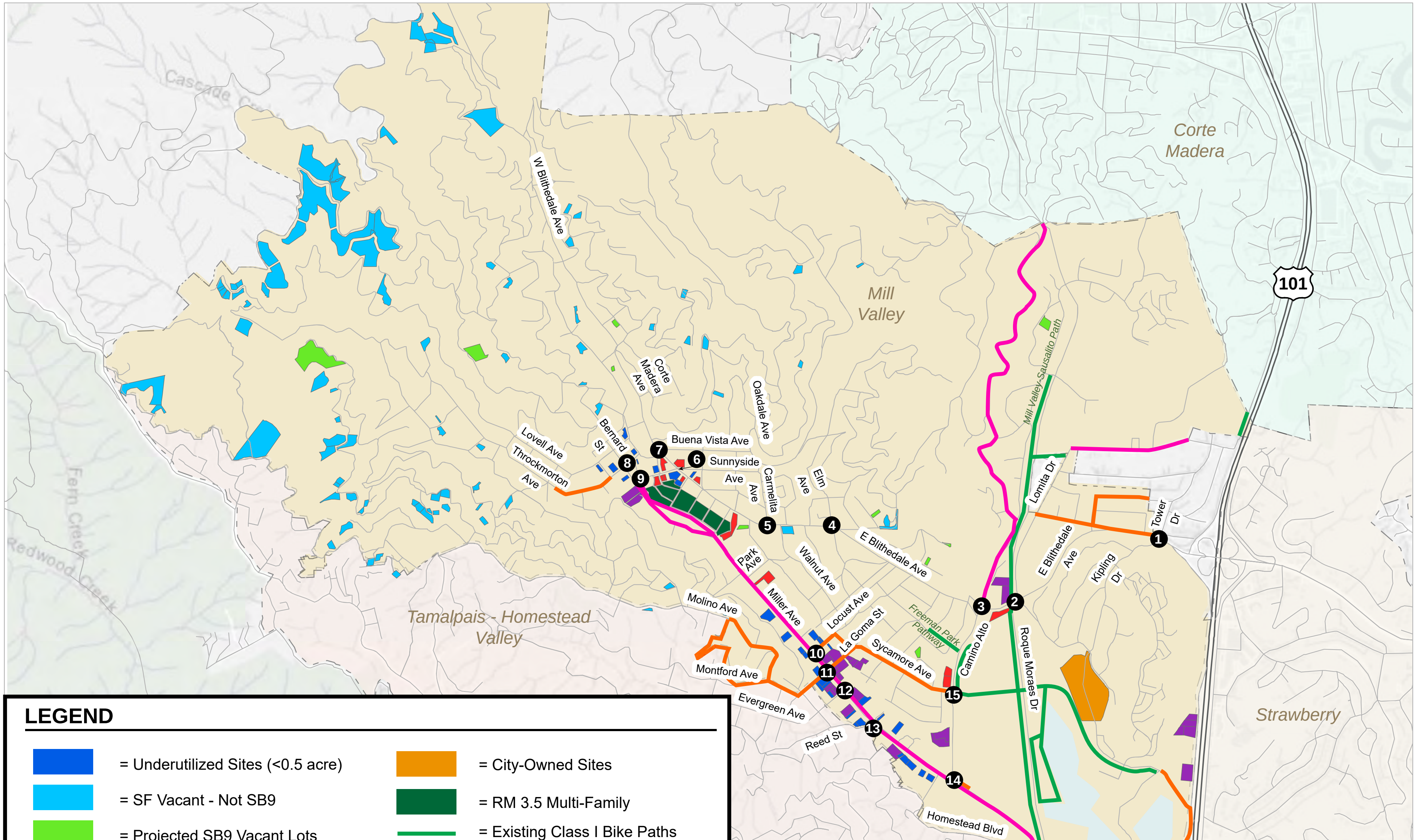
Pedestrian facilities in the City of Mill Valley consist of Class I paths, sidewalks, crosswalks, and pedestrian signals at signalized intersections.

Existing Class I paths include the Mill Valley-Sausalito Pathway, Bayfront Park Pathway, Edna Maguire Spur Pathway, Freeman Park Pathway, Hamilton Drive Pathway, and paths adjacent to Sycamore Avenue and Camino Alto as described in the section above.

Residential areas comprised of single-family homes generally lack pedestrian facilities like sidewalks and crosswalks. These areas contain steps, lanes, and paths (SLPs) that function as sidewalks in the City's hillside neighborhoods, providing a path of travel for pedestrians from the hillsides to key destinations such as schools, transit stops, and commercial and recreational areas. Most single-family housing sites proposed in the HEU are located in these areas.

The multifamily housing sites are proposed near the major streets in the City that have pedestrian facilities: E. Blithedale Avenue, Miller Avenue, Camino Alto, Sunnyside Avenue, and Throckmorton Avenue. Continuous sidewalks are present on at least one side of these major streets. All signalized study intersections have crosswalks along at least two of the legs.

Highway 101 is located east of Mill Valley, and bus stops for several bus routes are located along Tiburon Boulevard at the US 101/E. Blithedale Avenue/Tiburon Boulevard interchange. A sidewalk is provided on the north side of E. Blithedale Avenue/Tiburon Boulevard, which provides access to the bus stop on the north side of Tiburon Boulevard. The bus stop on the south side on Tiburon Boulevard can be accessed via crosswalks at US 101 southbound off ramp and Tiburon Boulevard. Additionally, there are pedestrian paths that connect Tiburon Way to the bus stops located at the Tiburon Wye Bus Pads located at the interchange.



LEGEND

(blue)	= Underutilized Sites (<0.5 acre)	(orange)	= City-Owned Sites
(light blue)	= SF Vacant - Not SB9	(dark green)	= RM 3.5 Multi-Family
(green)	= Projected SB9 Vacant Lots	(green line)	= Existing Class I Bike Paths
(purple)	= Opportunity Sites (>0.5 acre)	(pink line)	= Existing Class II Bike Lanes
(red)	= Office Conversion	(orange line)	= Existing Class III Bike Routes
		X	= Study Intersection

Figure 3
Existing Bicycle Facilities

HEXAGON

NORTH
Not to Scale

Existing Transit Services

Existing transit service in Mill Valley is provided by Marin Transit and Golden Gate Transit (see Figure 3 and Table 4). Five Marin Transit bus routes (Route 17, 22, 36, 61, 71) and four Golden Gate Transit (114, 130, 132, 150) routes serve the City.

Table 4
Existing Transit Facilities

Bus Route	Route Description	Nearby Bus Stops	Weekday Hours of Operation[1]	Headway (minutes)[1]
Route 17	Downtown San Rafael - Sausalito	Kipling Drive & E. Blithedale Avenue, Miller Avenue & Almonte Boulevard	5:30 AM - 11:30 PM	30-35
Route 22	Downtown San Rafael - Marin City	US 101 at Tiburon Wye Bus Pad	6:00 AM - 11:00 PM	60
Route 36	Canal - Marin City	US 101 at Tiburon Wye Bus Pad, Redwood Hightway Frontage Road & US 101 SB Ramps	6:00 AM - 8:20 PM	30
Route 61	Sausalito - Bolinas	Miller Avenue & Camino Alto	6:40 AM - 8:08 PM	7:39 AM & 4:34 PM
Route 71	Novato - Marin City	US 101 at Tiburon Wye Bus Pad, US 101 at Seminary Drive Bus Pad	5:18 AM - 12:55 AM (next day)	30
Route 114	Mill Valley - San Francisco	Kipling Drive & E. Blithedale Avenue, Miller Avenue & Almonte Boulevard	5:25 AM - 8:53 AM (southbound), 2:58 PM - 7:52 PM (northbound)	30
Route 130	San Rafael - San Francisco	US 101 at Tiburon Wye Bus Pad, US 101 at Seminary Drive Bus Pad	5:17 AM - 12:25 AM (next day)	60
Route 132	San Anselmo - San Francisco	US 101 at Tiburon Wye Bus Pad, US 101 at Seminary Drive Bus Pad	5:48 AM - 9:28 AM (southbound), 3:08 PM - 7:04 PM (northbound)	30
Route 150	San Rafael - San Francisco	US 101 at Tiburon Wye Bus Pad, US 101 at Seminary Drive Bus Pad	4:52 AM - 9:55 PM	60

Note:
1. Approximate weekday operation hours and headways during peak commute periods in the project area, as of July 2022.

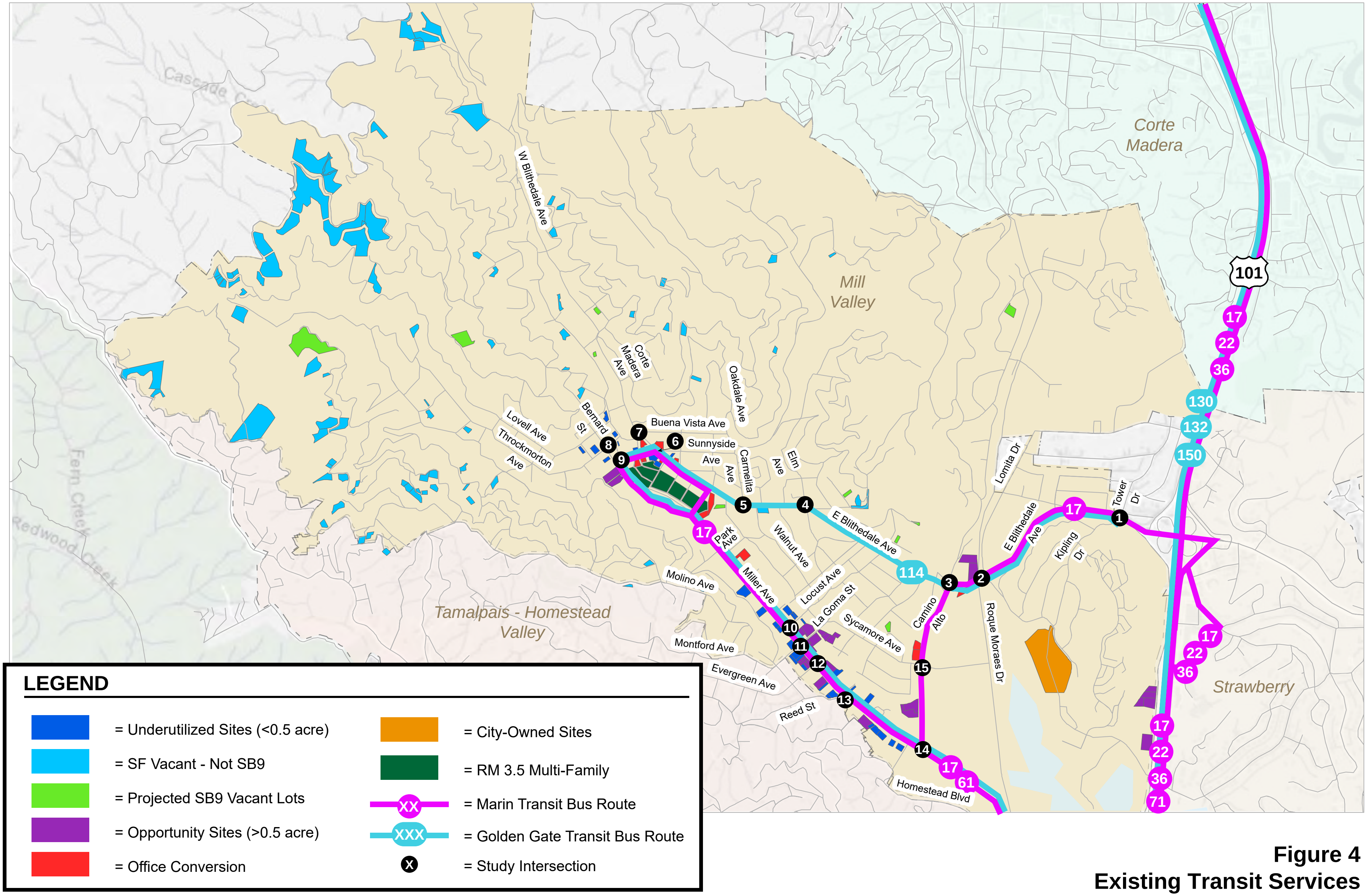


Figure 4
Existing Transit Services

3.
CEQA Transportation Analysis

This section describes the California Environmental Quality Act (CEQA) transportation analysis for the proposed project. The following describes the significance criteria used to identify impacts on the transportation system for the proposed HEU. **A significant impact would occur if implementation of the HEU would**:

1. Conflict with an applicable program, plan, ordinance, or policy establishing measures of effectiveness for the performance of addressing the circulation system, including transit, bicycle, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). For the purposes of this evaluation, this impact would be significant if the implementation of the HEU would generate home-based VMT per resident within the HEU planning areas that is higher than 85 percent of the County average home-based VMT per resident.
3. Result in designs for on-site circulation, access, and parking areas that fail to meet City or industry standard design guidelines.
4. Result in inadequate emergency access to development sites.

Impact Criteria 1: Implementation of the HEU would be consistent with an applicable program, plan, ordinance, or policy establishing measures of effectiveness for the performance of addressing the circulation system, including transit, bicycle, and pedestrian facilities.

Implementation of the HEU would be subject to and implement General Plan policies applicable to transit, bicycle, and pedestrian facilities. Additionally, development projects under the HEU would be subject to all applicable City guidelines, standards, and specifications related to transit, bicycle, or pedestrian facilities.

Specifically, any modifications or new transit, bicycle, and pedestrian facilities would be subject to and designed in accordance with all applicable General Plan policies. In particular, Mobility Plan Policy M.4-2 supports safe and efficient transportation links for cars, transit, bicycles, and pedestrians from Mill Valley to regional transportation services and facilities, such as the implementation of the Miller Avenue Streetscape Plan; Policy M.4-4 requires implementation of bicycle, transit, and pedestrian connections, pavement markings, and signage that increase the use, safety, and convenience of these transportation modes; Policy M.4-7 considers establishing a transportation mitigation fee, requiring all new projects to pay a pro rata share of needed multi-modal access improvements (a transportation mitigation fee) in accordance with the burden created by such new projects; Policy M.5-1 promotes alternate travel modes (walking, cycling, public transit, ride sharing), through education and outreach including provision of accessible information about bus schedules, pedestrian pathways, trails, the 511 Rideshare Program, and related vanpool incentive programs; Policy M.10-2 requires establishment of a sidewalk and public right-of-way inspection, maintenance, and repair program that includes a requirement for sidewalk installation, repair, or replacement where sidewalks already exist or where identified gaps in the existing sidewalk network can be closed; Policy M.10-4 continues to review all projects for access for the physically disabled and require the installation of ramps and curb cuts in accordance with Title 24 of the California Administrative Code and the Americans with Disabilities Act of 1991; Policy M.12-4 requires project developers to construct, and if appropriate, maintain the new facilities where new steps, lanes, or paths are created as a result of new development; Policy M.14-1 requires improvement to public transit infrastructure (e.g., lighting, benches, shelters, trash cans, safe and convenient bike racks and lockers, park and ride areas, news racks, real-time transit arrival information, etc.).

The City has also adopted a Bicycle/Pedestrian Plan (adopted November 2017) that establishes the City's vision for a network of bicycle and pedestrian facilities to encourage bicycling and walking as viable modes of travel around the City. The Plan identifies specific improvement projects around the City to improve the walking and bicycling environment. The plan proposes new or upgraded bicycle facilities and intersection improvements along major roads in the City including Blithedale Avenue, Miller Avenue, Roque Morales Drive, Kipling Drive, and Sycamore Avenue near which several of the proposed housing sites are located.

The City is served by the following bus routes: five Marin Transit bus routes (Route 17, 22, 36, 61, 71) and four Golden Gate Transit (114, 130, 132, 150) bus routes near which several of the proposed housing sites are located.

Because implementation of the HEU would be subject to all applicable City guidelines, standards, and specifications, the proposed HEU would not conflict with adopted policies, plans, or programs for transit, bicycle, or pedestrian facilities. Therefore, the HEU would result in a less-than-significant impact to transit, bicycle, and pedestrian facilities.

Mitigation Measure: None required.

Impact Criteria 2: Implementation of the HEU could generate home-based VMT per resident that is greater than 85 percent of the County average home- based VMT per resident.

Pursuant to SB 743, the California Natural Resources Agency finalized updates to the CEQA Guidelines in late 2018. The guidelines state that level of service will no longer be considered to be an environmental impact under CEQA and consider vehicle-miles-traveled (VMT) the most appropriate measure of transportation impact. VMT is defined as the total distance traveled by vehicles traveling to and from a land use over a typical day. Since the City of Mill Valley has not formally adopted a VMT policy, the VMT analysis is based on Governor's Office of Planning and Research (OPR)'s guidelines.

Per OPR, a project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita.

VMT Thresholds of Significance

The HEU would result in an increase in Mill Valley's housing by 1,156 dwelling units. OPR's guidelines state that for residential developments, the VMT analysis should be based on home-based VMT per resident. Consistent with OPR's guidelines, this analysis assumes 85 percent of the existing County average VMT per resident as the threshold of significance for residential development. Therefore, the

HEU is considered to generate a significant VMT impact if the project sites' average home-based VMT per resident would exceed the existing County VMT per resident threshold.

VMT Analysis

In order to estimate the County VMT threshold and the HEU's VMT, the TAMDM forecast model was used. The TAMDM model is the best available model to represent travel within the City of Mill Valley and serves as the primary forecasting tool for Marin County and the City. The model is a mathematical representation of travel within the nine Bay Area counties. The base model structure was developed by the Metropolitan Transportation Commission (MTC) and further refined by the Transportation Authority of Marin for use within Marin County.

The model uses socioeconomic inputs (i.e., population, income, employment) aggregated into geographic areas, called transportation analysis zones (TAZs) to estimate travel within the model area. For residential land uses, the VMT threshold is expressed in terms of home-based vehicle-miles traveled per resident. As estimated by the TAMDM model, the existing (2015) Marin County average residential VMT is 15.8 daily VMT per resident. Therefore, the VMT threshold for this project is 13.4 daily VMT per resident. As shown in Table 5, the HEU is estimated to generate an average VMT per resident of 14.5, which is 8.2 percent over the VMT threshold of 13.4. Therefore, the HEU would cause a significant impact on VMT.

Table 5
VMT Analysis

	Average VMT/Res [1]
Housing Element Units	14.5
VMT/Res Threshold[2]	13.4
Percent Mitigation Required	**8.2%**

Notes:
VMT = Vehicular Miles Travelled; Res = Resident
1. Data generated using Transportation Authority of Marin's Demand Model (TAMDM).
2. 85% of countywide average(15.8)

VMT Impacts and Mitigation Measures

Because the residential use would generate a VMT level (14.5 per resident) greater than the threshold (13.4 per capita), the HEU would result in a significant transportation impact on VMT. Therefore, mitigation measures for the HEU are required to reduce VMT to below the threshold.

Mitigation: It is recommended that the HEU include travel demand management measures, including but not limited to the measures below, that have been identified as potentially VMT reducing in the California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021).

- Unbundle parking costs (i.e. sell or lease parking separately from the housing unit).
- Provide car-sharing, bike sharing, or scooter sharing programs.
- Provide bicycle parking.
- Subsidize transit passes for residents.
- Integrate affordable and below market rate housing.
- Provide trip planning resources.

- Provide pedestrian network improvements.
- Construct or improve bike facilities.
- Implement a school pool program.

A large number of the HEU sites propose single family homes or multi-family developments with a small number of units. TDM measures are typically not applicable to single-family homes and have limited effectiveness for smaller developments and owner-occupied units. It is recommended that individual projects in the HEU evaluate their VMT impacts and incorporate VMT reduction measures that are feasible for the individual project circumstance (including ownership status). It is not known whether TDM measures would be sufficient to entirely offset the VMT impact of the HEU. Therefore, the VMT impact analysis for the HEU would conservatively remain significant and unavoidable with mitigation.

Impact Criteria 3: Implementation of the HEU would result in designs for on-site circulation, access, and parking areas that meet City or industry standard design guidelines.

Subsequent projects under the HEU, including any new roadway, bicycle, pedestrian, and transit infrastructure improvements, would be subject to, and designed in accordance with City standards and specifications that address potential design hazards including sight distance, driveway placement, and signage and striping. Additionally, any new transportation facilities, or improvements to such facilities associated with subsequent projects would be constructed based on industry design standards and best practices consistent with the City's zoning code and building design and inspection requirements. The City's evaluation of projects' access and circulation will incorporate analysis with respect to City standards for vehicular level of service and queueing, as well as for service to pedestrians, bicyclists, and transit users. Therefore, the HEU would result in a less-than-significant impact to transportation hazards.

Mitigation Measure: None required.

Impact Criteria 4: Implementation of the HEU would result in adequate emergency access to development sites.

There are no specific development projects associated with the HEU; and thus, specific housing sites developed under the HEU cannot be analyzed for adequacy of emergency access at this time. However, the City maintains the roadway network that provides access to new development sites in accordance with industry design standards, which ensures that the physical network would be free of obstructions to emergency responders. Emergency access to new development sites proposed under the HEU would be subject to review by the City and responsible emergency service agencies, thus ensuring the projects would be designed to meet all emergency access and design standards. The City also requires the preparation of construction management plans that minimize temporary obstruction of traffic during site construction. Additional vehicles associated with new development sites could increase delays for emergency response vehicles during peak commute hours. However, emergency responders maintain response plans that include use of alternate routes, sirens, and other methods to bypass congestion and minimize response times. In addition, California law requires drivers to yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes to ensure the safe and timely passage of emergency vehicles.

Based on the above considerations, adequate emergency access would be provided to new development sites, and the impact would be less than significant.

Mitigation Measure: None required.

4. Local Transportation Analysis

This chapter describes the local transportation analysis (LTA) including the method by which project traffic is estimated, intersection operations analysis for existing, existing plus project, cumulative, and cumulative plus project scenarios, and any adverse effects to intersection level of service caused by the project.

Intersection Operations Analysis

The intersection operations analysis is intended to quantify the operations of Mill Valley's intersections and to identify potential negative effects due to the addition of project traffic. Information required for the intersection operations analysis related to project trip generation, trip distribution, and trip assignment are presented in this section. The study intersections are evaluated based on the City of Mill Valley's intersection analysis methodology and standards in determining potential adverse operational effects due to the project, as described in Chapter 1.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the project sites is estimated for the AM, mid-afternoon, and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel are estimated. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

AM and PM peak hour trip generation rates resulting from new development are typically estimated using trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition. Trips that would be generated by the proposed housing were estimated using the ITE trip rates for "Low-Rise Multifamily Housing" (Land use 220) and "Single Family Detached Housing" (Land use 210). ITE does not provide trip rates for weekday mid-afternoon peak hour (2:00 PM to 4:00 PM). Mid-afternoon peak hour rates were computed based on time-of-day trip distribution data provided by the ITE Trip Generation Manual, 11th Edition (see Appendix B).

The housing sites were grouped into Groups 0 – 18 based on their location. Group 0 indicates vacant sites proposed to be redeveloped with single family homes with a majority of the sites located far from the study intersections.

The trip generation is shown per housing development group in Table 6.

Existing Trip Credits

Trip credits were applied to locations where existing retail and office development would be removed based on direction by the City. It was assumed that existing commercial uses located at 310 Miller Avenue and 270 Miller Avenue would be redeveloped with residential uses only, and the 2nd floor of existing commercial or retail sites located under the "Office Conversions with Housing Overlay" category would be redeveloped with residential uses. The existing commercial and retail uses at all other sites would be retained, therefore, no trip credits were taken for those sites.

Net Project Trips

After applying trip credits for existing uses, it is estimated that the proposed HEU would generate 6,905 new daily trips, including 373 net new trips (31 net new inbound and 342 net new outbound) during the AM peak hour, 311 net new trips (187 net new inbound and 124 net new outbound) during the mid-afternoon peak hour, and 512 net new trips (363 net new inbound and 149 net new outbound) during the PM peak hour (see Table 6).

Trip Distribution

The trip distribution patterns for the proposed residential and existing commercial, school, and office uses were developed based on existing travel patterns on the surrounding roadway network, the location of complementary land uses like schools, and freeway access points. Figure 5 shows the distribution patterns for the project's existing and proposed residential uses during each peak hour. It is assumed that during the AM and mid-afternoon peak hours, a higher percentage of residential trips would be local due to school pick-up and drop-off, while during the PM peak hour a higher percentage of trips would be commute trips. The peak-hour vehicle trips generated by the existing and proposed project uses were assigned to the roadway network in accordance with the trip distribution patterns for each land use and the locations of project sites (see Figure 5).

Trip Assignment

Group 0 indicates vacant sites proposed to be redeveloped with single family homes with a majority of the sites located far from the study intersections. One site proposed to be redeveloped with one single family home under Group 0 is located between the E. Blithedale Avenue/Carmelita Avenue and E. Blithedale Avenue/Elm Avenue study intersections. This site would add one trip during the peak hours to the study intersections. Since the sites under this grouping would add minimal trips to the study intersections, they are not analyzed further.

The peak-hour vehicle trips generated by the existing and proposed project uses at the other groups were assigned to the roadway network in accordance with the trip distribution patterns and the locations of project sites (see Figure 5).

Table 6
Project Trip Generation Estimates

Land Use[1]	Size		Daily Rate	Daily Trips	AM Peak Hour Rate	AM In	AM Out	AM Total	MD Peak Hour[2,12] Rate	MD In	MD Out	MD Total	PM Peak Hour Rate	PM In	PM Out	PM Total
Group 0 -																
Single-Family Detached Housing[3]	106	DU	9.43	1,000	0.70	19	55	74	0.79	49	35	84	0.94	63	37	100
Net Site Trips				**1,000**		**19**	**55**	**74**		**49**	**35**	**84**		**63**	**37**	**100**
Group 1 -																
Multifamily Housing (Low-Rise)[4]	94	DU	6.74	634	0.40	9	29	38	0.32	17	13	30	0.51	30	18	48
Existing - Medical-Dental Office Building[5]	-7.1	KSF	36.00	-255	3.10	-17	-5	-22	4.77	-17	-17	-34	3.93	-8	-20	-28
Net Site Trips				**378**		**-8**	**24**	**16**		**0**	**-4**	**-4**		**22**	**-2**	**20**
Group 2 -																
Multifamily Housing (Low-Rise)[4]	33	DU	6.74	222	0.40	3	10	13	0.32	6	5	11	0.51	11	6	17
Existing - General Office Building[6]	-3.7	KSF	10.84	-40	1.52	-5	-1	-6	1.13	-2	-2	-4	1.44	-1	-4	-5
Net Site Trips				**182**		**-2**	**9**	**7**		**4**	**3**	**7**		**10**	**2**	**12**
Group 3 -																
Multifamily Housing (Low-Rise)[4]	92	DU	6.74	620	0.40	9	28	37	0.32	17	13	30	0.51	30	17	47
Net Site Trips				**620**		**9**	**28**	**37**		**17**	**13**	**30**		**30**	**17**	**47**
Group 4 -																
Multifamily Housing (Low-Rise)[4]	60	DU	6.74	404	0.40	6	18	24	0.32	11	8	19	0.51	20	11	31
Net Site Trips				**404**		**6**	**18**	**24**		**11**	**8**	**19**		**20**	**11**	**31**
Group 5 -																
Multifamily Housing (Low-Rise)[4]	43	DU	6.74	290	0.40	4	13	17	0.32	8	6	14	0.51	14	8	22
Net Site Trips				**290**		**4**	**13**	**17**		**8**	**6**	**14**		**14**	**8**	**22**
Group 6 -																
Multifamily Housing (Low-Rise)[4]	40	DU	6.74	270	0.40	4	12	16	0.32	7	6	13	0.51	13	7	20
Net Site Trips				**270**		**4**	**12**	**16**		**7**	**6**	**13**		**13**	**7**	**20**
Group 7 -																
Multifamily Housing (Low-Rise)[4]	50	DU	6.74	337	0.40	5	15	20	0.32	9	7	16	0.51	16	10	26
Net Site Trips				**337**		**5**	**15**	**20**		**9**	**7**	**16**		**16**	**10**	**26**
Group 8 -																
Multifamily Housing (Low-Rise)[4]	64	DU	6.74	431	0.40	6	20	26	0.32	12	9	21	0.51	21	12	33
Net Site Trips				**431**		**6**	**20**	**26**		**12**	**9**	**21**		**21**	**12**	**33**
Group 9 -																
Multifamily Housing (Low-Rise)[4]	55	DU	6.74	371	0.40	5	17	22	0.32	10	8	18	0.51	18	10	28
Net Site Trips				**371**		**5**	**17**	**22**		**10**	**8**	**18**		**18**	**10**	**28**

Table 6 (Continued)
Project Trip Generation Estimates

Group 10 -																
Multifamily Housing (Low-Rise)[4]	93	DU	6.74	627	0.40	9	28	37	0.32	17	13	30	0.51	30	17	47
Existing - Charter Elementary School[7]	-35	Students	1.85	-65	1.04	-19	-17	-36	0.21	-2	-5	-7	0.16	-2	-4	-6
Existing - General Office Building[6]	-5.3	KSF	10.84	-57	1.52	-7	-1	-8	1.13	-3	-3	-6	1.44	-1	-7	-8
Existing - Hair Salon[8]	-3.1	KSF	45.00	-140	1.21	-2	-2	-4	1.37	-2	-2	-4	1.45	-1	-4	-5
Net Site Trips				**364**		**-19**	**8**	**-11**		**10**	**3**	**13**		**26**	**2**	**28**
Group 11 -																
Multifamily Housing (Low-Rise)[4]	57	DU	6.74	384	0.40	6	17	23	0.32	10	8	18	0.51	18	11	29
Single-Family Detached Housing[3]	4	DU	9.43	38	0.70	1	2	3	0.79	2	1	3	0.94	3	1	4
Existing - General Office Building[6]	-8.0	KSF	10.84	-87	1.52	-11	-1	-12	1.13	-4	-5	-9	1.44	-2	-10	-12
Net Site Trips				**335**		**-4**	**18**	**14**		**8**	**4**	**12**		**19**	**2**	**21**
Group 12 -																
Multifamily Housing (Low-Rise)[4]	61	DU	6.74	411	0.40	6	18	24	0.32	11	9	20	0.51	20	11	31
Existing - Strip Retail Plaza[9]	-5.4	KSF	54.45	-294	2.36	-8	-5	-13	6.10	-17	-16	-33	6.59	-18	-18	-36
Net Site Trips				**117**		**-2**	**13**	**11**		**-6**	**-7**	**-13**		**2**	**-7**	**-5**
Group 13 -																
Multifamily Housing (Low-Rise)[4]	46	DU	6.74	310	0.40	4	14	18	0.32	8	7	15	0.51	14	9	23
Existing - General Office Building[6]	-8.0	KSF	10.84	-86	1.52	-11	-1	-12	1.13	-4	-5	-9	1.44	-2	-9	-11
Existing - Fine Dining Restaurant[10]	-2.3	KSF	83.34	-193	0.73	-1	-1	-2	4.13	-4	-6	-10	7.8	-12	-6	-18
Pass By-Fine Dining Restaurant				*85*		*0*	*0*	*0*		*2*	*3*	*4*		*5*	*3*	*8*
Net Site Trips				**116**		**-8**	**12**	**4**		**2**	**-1**	**0**		**5**	**-3**	**2**
Group 14 -																
Multifamily Housing (Low-Rise)[4]	23	DU	6.74	155	0.40	2	7	9	0.32	4	3	7	0.51	8	4	12
Existing - Furniture Store[11]	-2.3	KSF	6.30	-14	0.26	-1	0	-1	0.33	-1	0	-1	0.52	-1	0	-1
Existing - General Office Building[6]	-6.8	KSF	10.84	-74	1.52	-9	-1	-10	1.13	-4	-4	-8	1.44	-2	-8	-10
Net Site Trips				**67**		**-8**	**6**	**-2**		**-1**	**-1**	**-2**		**5**	**-4**	**1**
Group 15 -																
Multifamily Housing (Low-Rise)[4]	26	DU	6.74	175	0.40	2	8	10	0.32	5	3	8	0.51	8	5	13
Net Site Trips				**175**		**2**	**8**	**10**		**5**	**3**	**8**		**8**	**5**	**13**
Group 16 -																
Multifamily Housing (Low-Rise)[4]	31	DU	6.74	209	0.40	3	9	12	0.32	6	4	10	0.51	10	6	16
Net Site Trips				**209**		**3**	**9**	**12**		**6**	**4**	**10**		**10**	**6**	**16**
Group 17 -																
Single-Family Detached Housing[3]	14	DU	9.43	132	0.70	3	7	10	0.79	6	5	11	0.94	8	5	13
Net Site Trips				**132**		**3**	**7**	**10**		**6**	**5**	**11**		**8**	**5**	**13**

Table 6 (Continued)
Project Trip Generation Estimates

Group 18 -																
Multifamily Housing (Low-Rise)[4]	164	DU	6.74	1,105	0.40	16	50	66	0.32	30	23	53	0.51	53	31	84
Net Site Trips				**1,105**		**16**	**50**	**66**		**30**	**23**	**53**		**53**	**31**	**84**
Total Net Trips				6,905		31	342	373		187	124	311		363	149	512

Notes
1. Trip rates are from the ITE Trip Generation Manual, 11th Edition, 2021.
2. ITE Trip Generation manual does not provide trip rates for the mid-afternoon peak hour (2PM-4PM). Mid-afternoon peak hour rates have been computed based on vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition.
3. Single-Family Detached Housing (Land Use 210), average rates expressed in trips per dwelling unit (DU) are used.
4. Multifamily Housing (Low-Rise) (Land Use 220), average rates expressed in trips per dwelling unit (DU) are used.
5. Medical-Dental Office Building (Land Use 720), averages rates expressed in trips per 1000 square feet are used.
6. General Office Building (Land Use 710), average rates expressed in trips per 1000 square feet are used.
7. Charter Elementary School (Land Use 536), average rates expressed in trips per students are used.
8. Hair Salon (Land Use 918), average rates expressed in trips per 1000 square feet are used. The manual does not provide daily rates for Land Use 918. Daily traffic was estimated based on peak hour rates i.e. 10*Avg of peak hour rates.
9. Strip Retail Plaza (<40K) (Land Use 822), average rates expressed in trips per 1000 square feet are used.
10. Fine Dining Restaurant (Land Use 931), average rates expressed in trips per 1000 square feet are used.
11. Furniture Store (Land Use 890), average rates expressed in trips per 1000 square feet are used.
12. Mid-Afternoon peak hour inbound and outbound splits for Land Use 220 and Land Use 221 have been computed based on vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition. The manual does not provide inbound and outbound splits during the mid-afternoon peak hour for Land Use 821 and Land Use 822. PM peak hour inbound and outbound splits have been used for these uses.

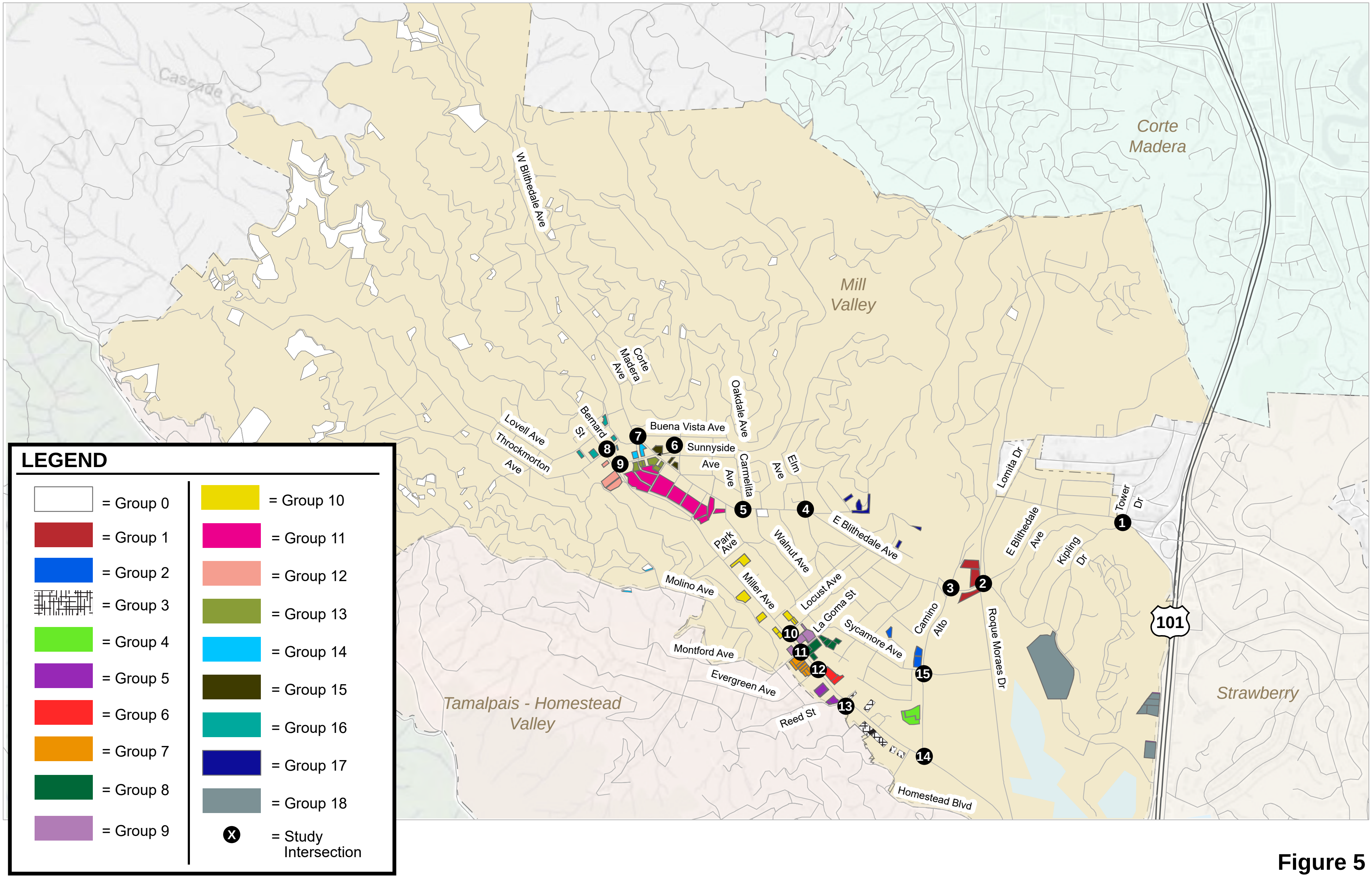


Figure 5
Housing Site Groupings

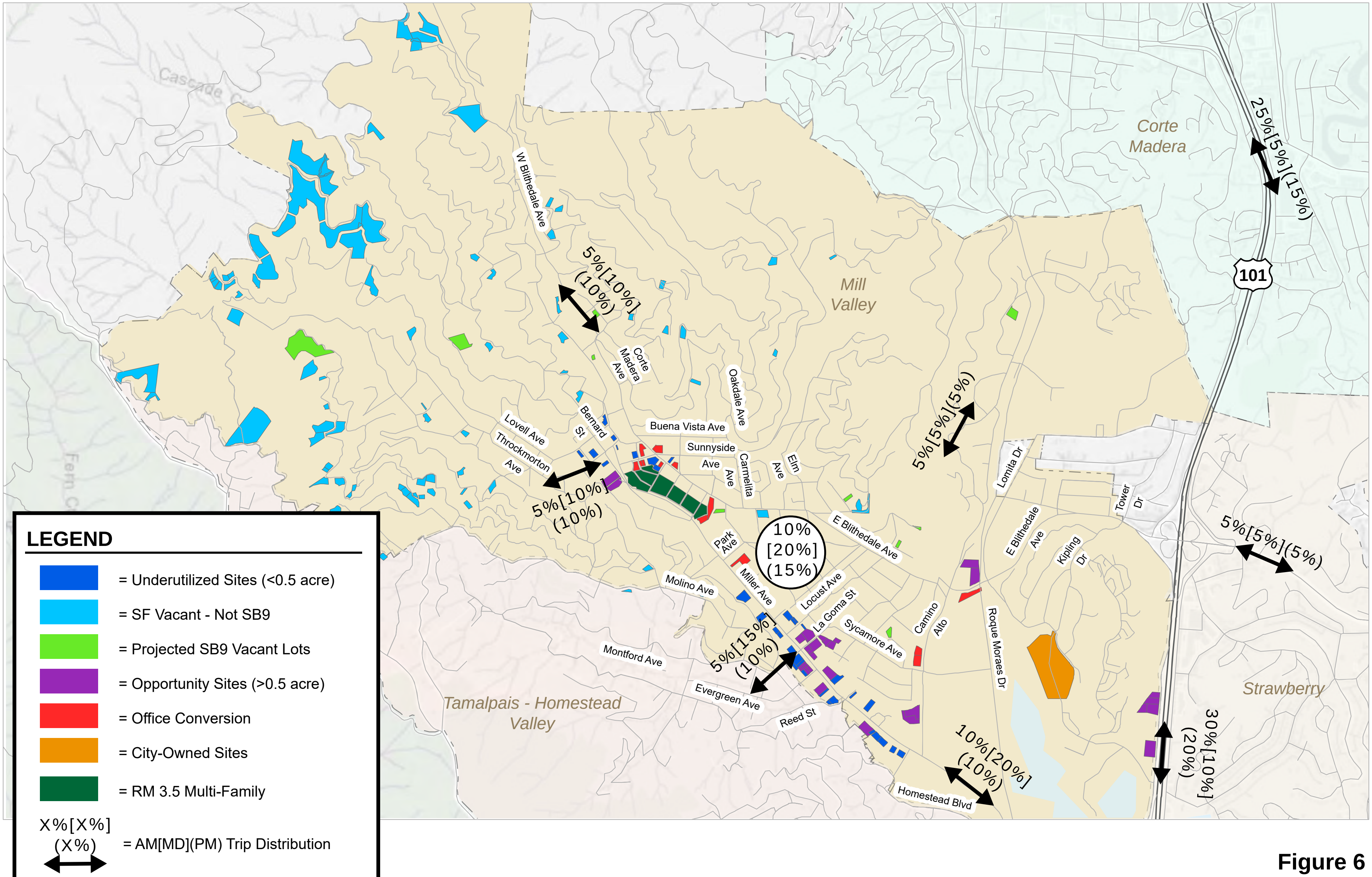
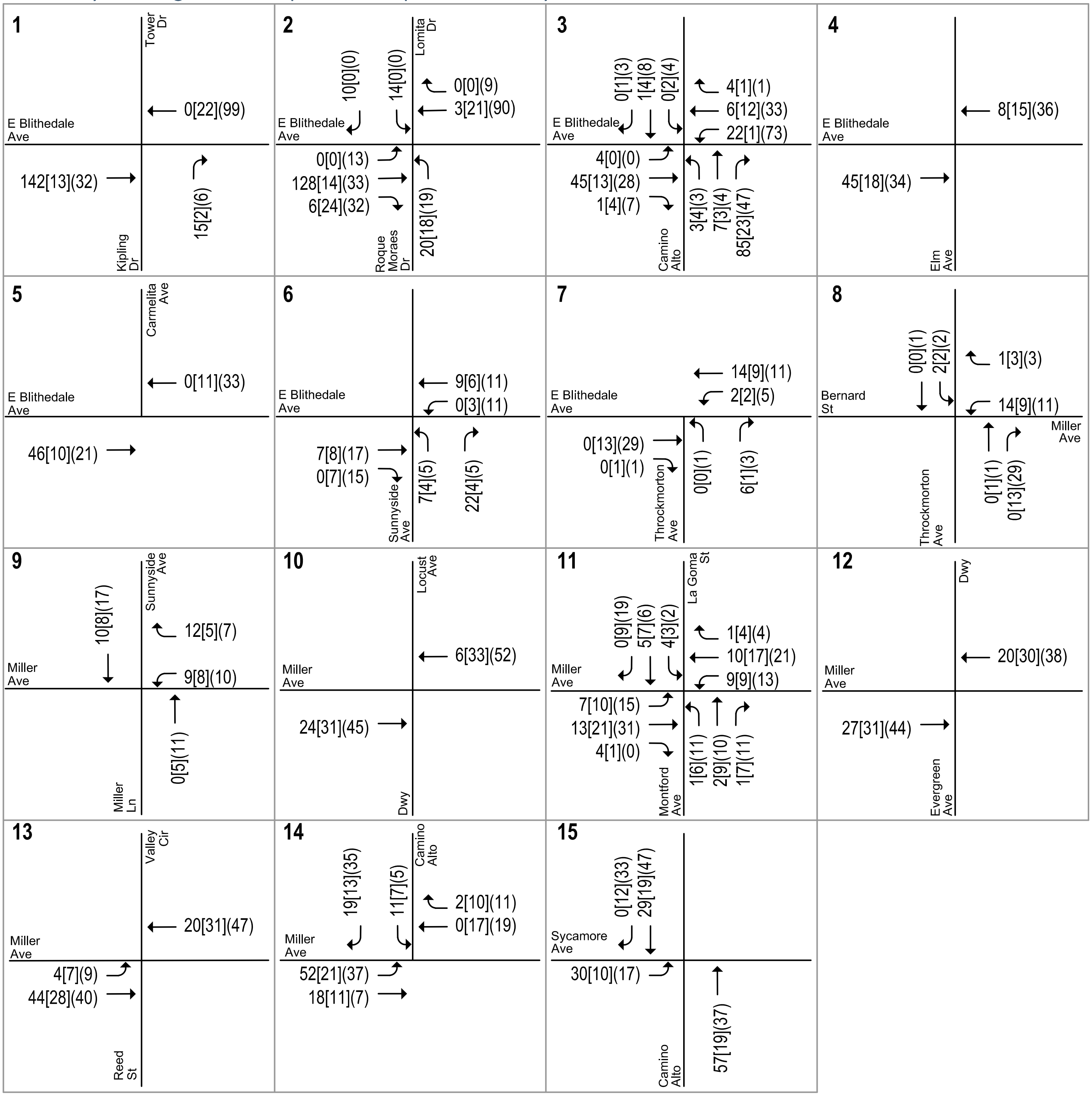


Figure 6
Project Trip Distribution



LEGEND

XX[XX](XX) = AM[MD](PM) Peak-Hour Trips

Figure 7
Project Trip Assignment

HEXAGON

NORTH
Not to Scale

Intersection Lane Configurations and Traffic Volumes Under All Scenarios

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections are shown on Figure 8.

Existing AM, mid-afternoon, and PM traffic volumes at the study intersections were based on pre-pandemic traffic counts conducted in 2012 and new AM and PM peak hour counts collected in 2022 as part of other transportation studies in the City (see Figure 9).

Since the pre-pandemic counts are older than two years, intersections that had year 2012 and year 2022 count data were explored to determine whether a growth factor should be applied. However, the more recent years of intersection traffic counts generally showed a marginal decrease in traffic volumes during all peak hours. Therefore, 2012 counts were used at intersections where 2022 counts were not available, and no additional growth factor was applied to increase the counts to 2022.

Intersection turning-movement counts used for this analysis are presented in Appendix A. The volume summary sheets with the existing counts are presented in Appendix C.

Existing Plus Project Lane Configurations and Traffic Volumes

The intersection lane configurations under existing plus project conditions for all intersections are assumed to be the same as under existing conditions.

Project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 10).

Cumulative Lane Configurations and Traffic Volumes

The intersection lane configurations under cumulative conditions for all intersections are assumed to be the same as under existing conditions

The cumulative scenario assumed a year 2031 horizon, which represents the RHNA planning cycle. An annual growth factor of 0.25 percent was used based on the 2016 General Plan. The growth factor to year 2031 was applied to all study intersections. The cumulative peak-hour intersection volumes are shown on Figure 11.

Cumulative Plus Project Lane Configurations and Traffic Volumes

The intersection lane configurations under cumulative plus project conditions are assumed to be the same as under cumulative conditions.

Project trips were added to cumulative traffic volumes to obtain cumulative plus project traffic volumes (see Figure 12).

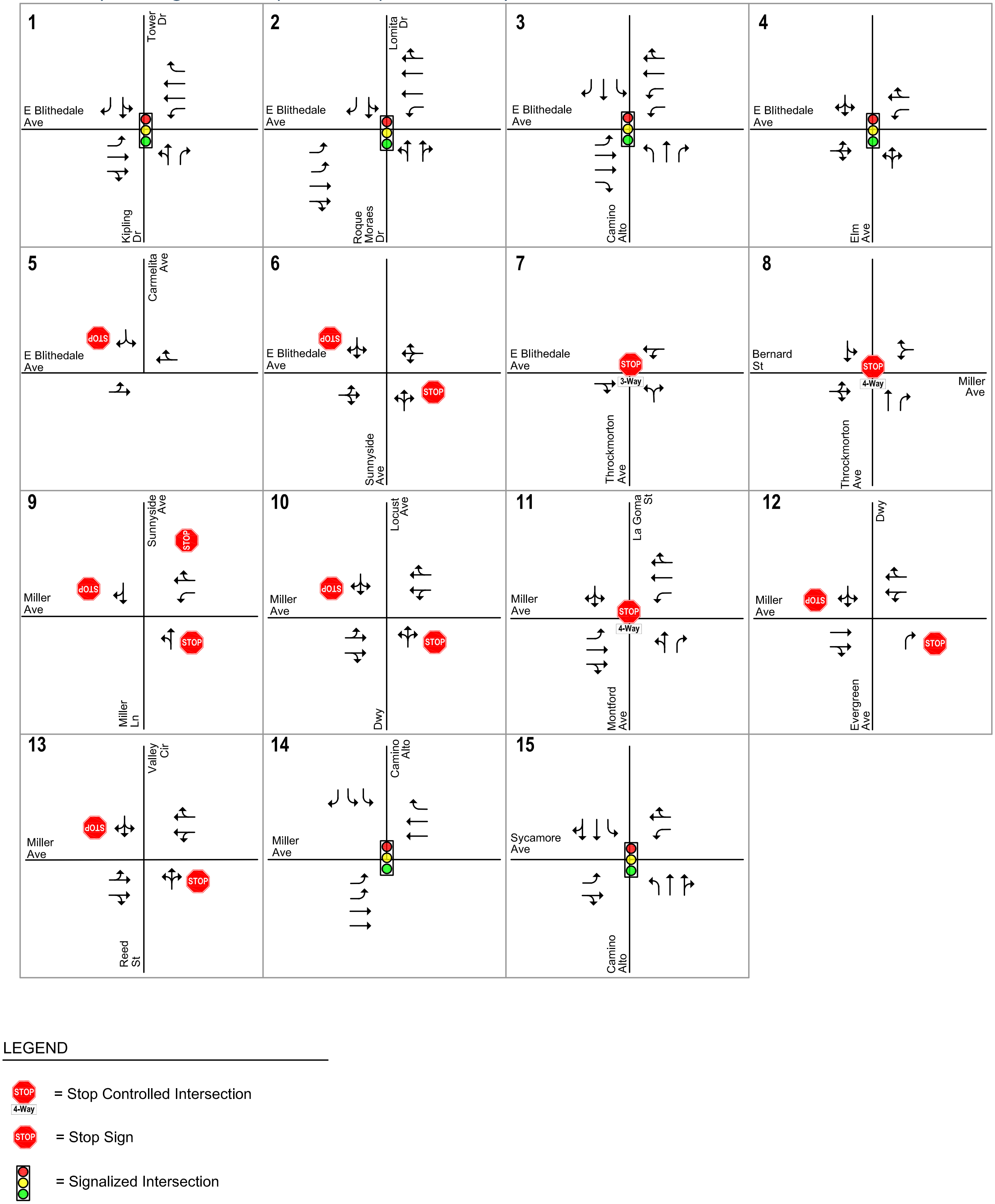
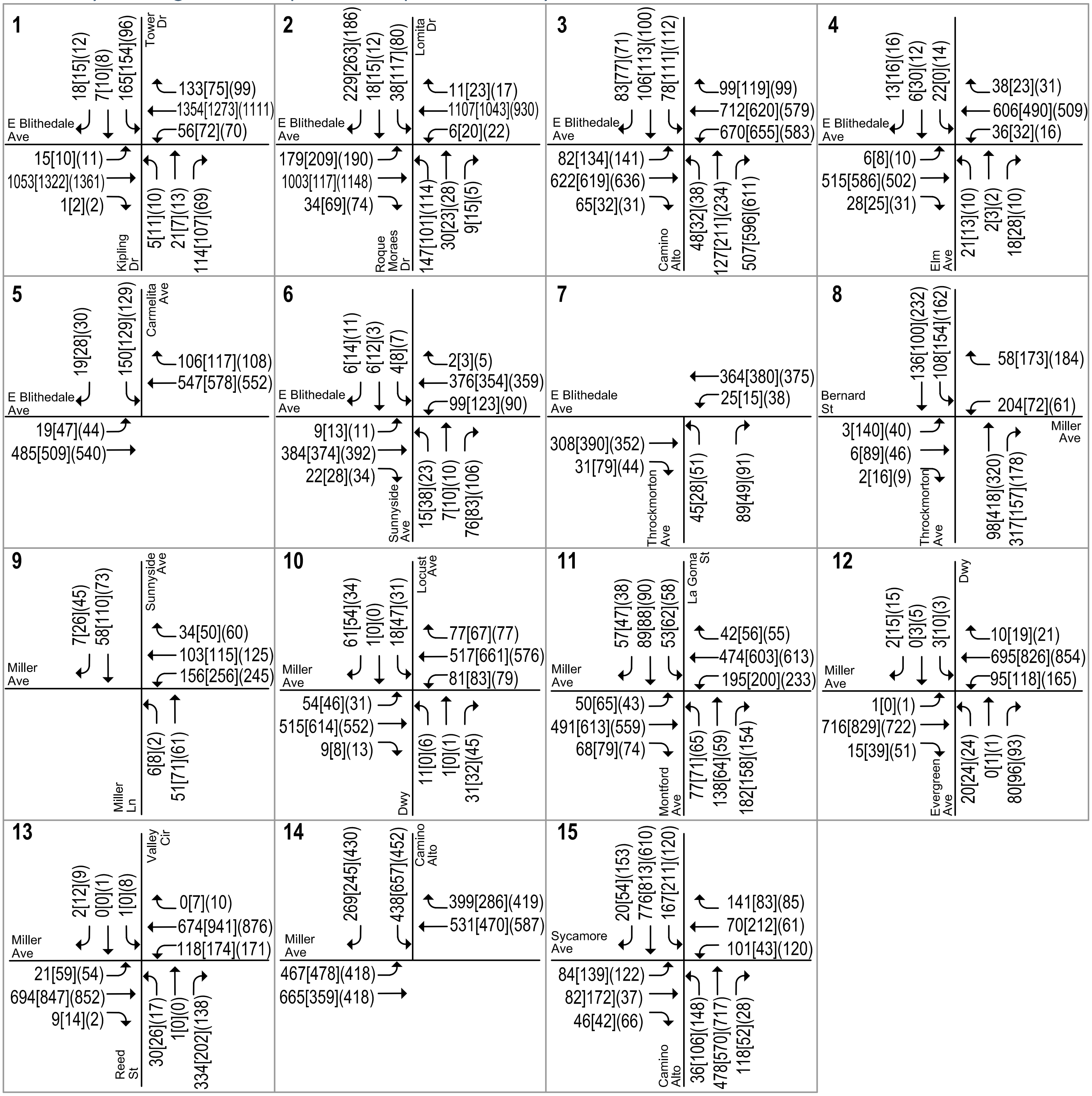


Figure 8
Existing Lane Configurations

HEXAGON

NORTH
Not to Scale

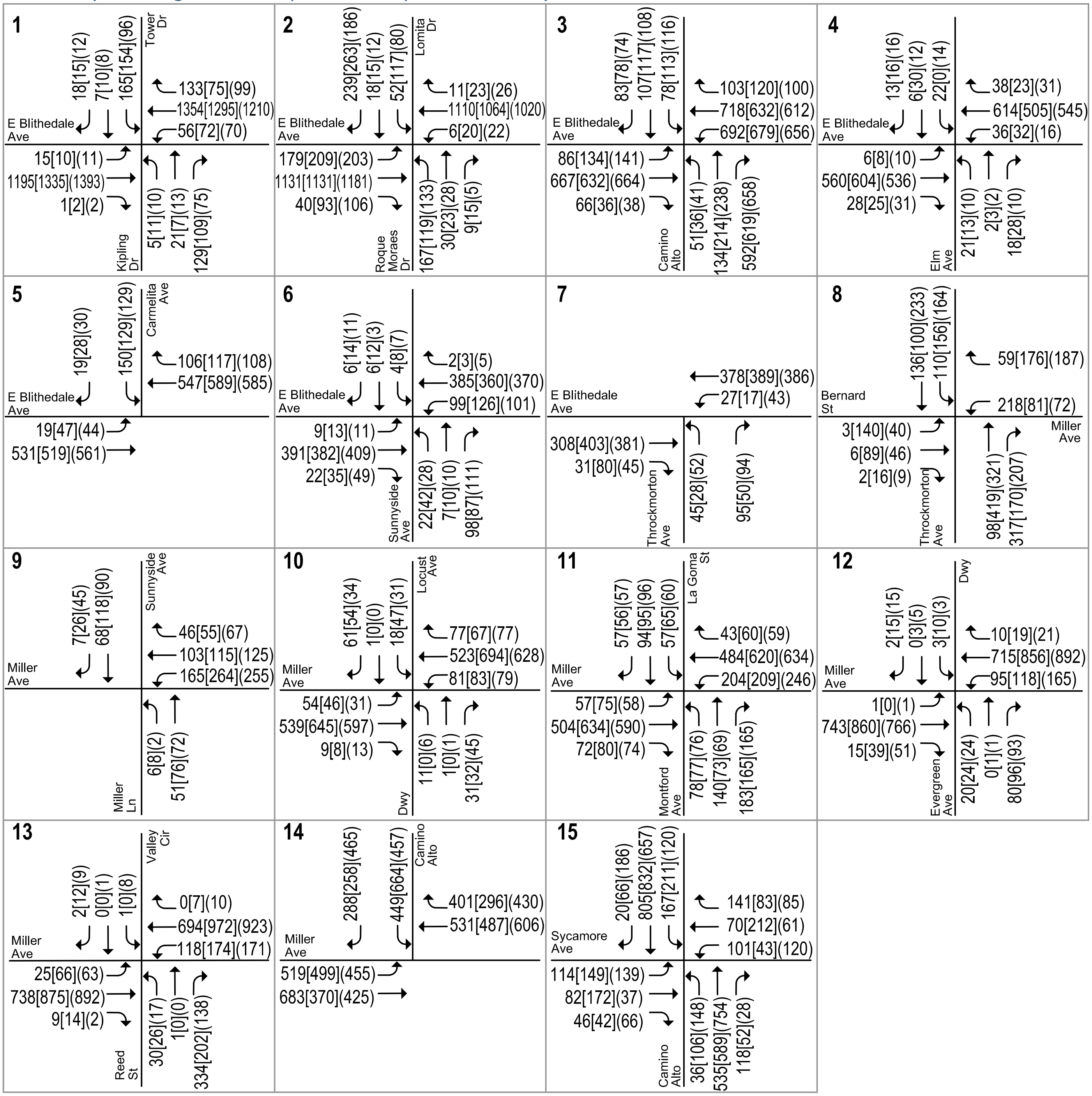


LEGEND

XX[XX](XX) = AM[MD](PM) Peak-Hour Traffic Volumes

Figure 9
Existing Traffic Volumes

NORTH
Not to Scale



LEGEND

XX[XX](XX) = AM[MD](PM) Peak-Hour Traffic Volumes

Figure 10
Existing Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

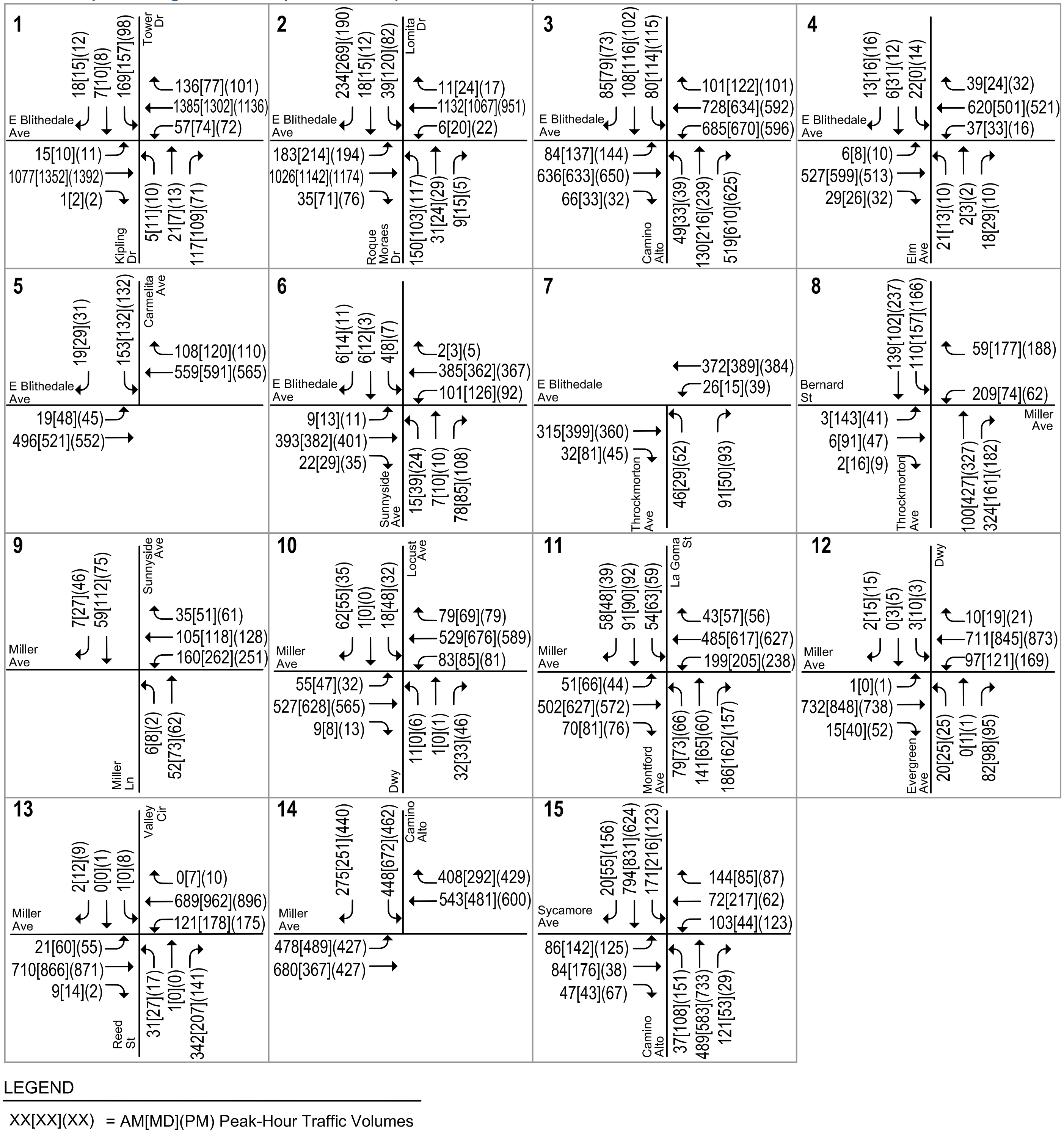


Figure 11
Cumulative Traffic Volumes

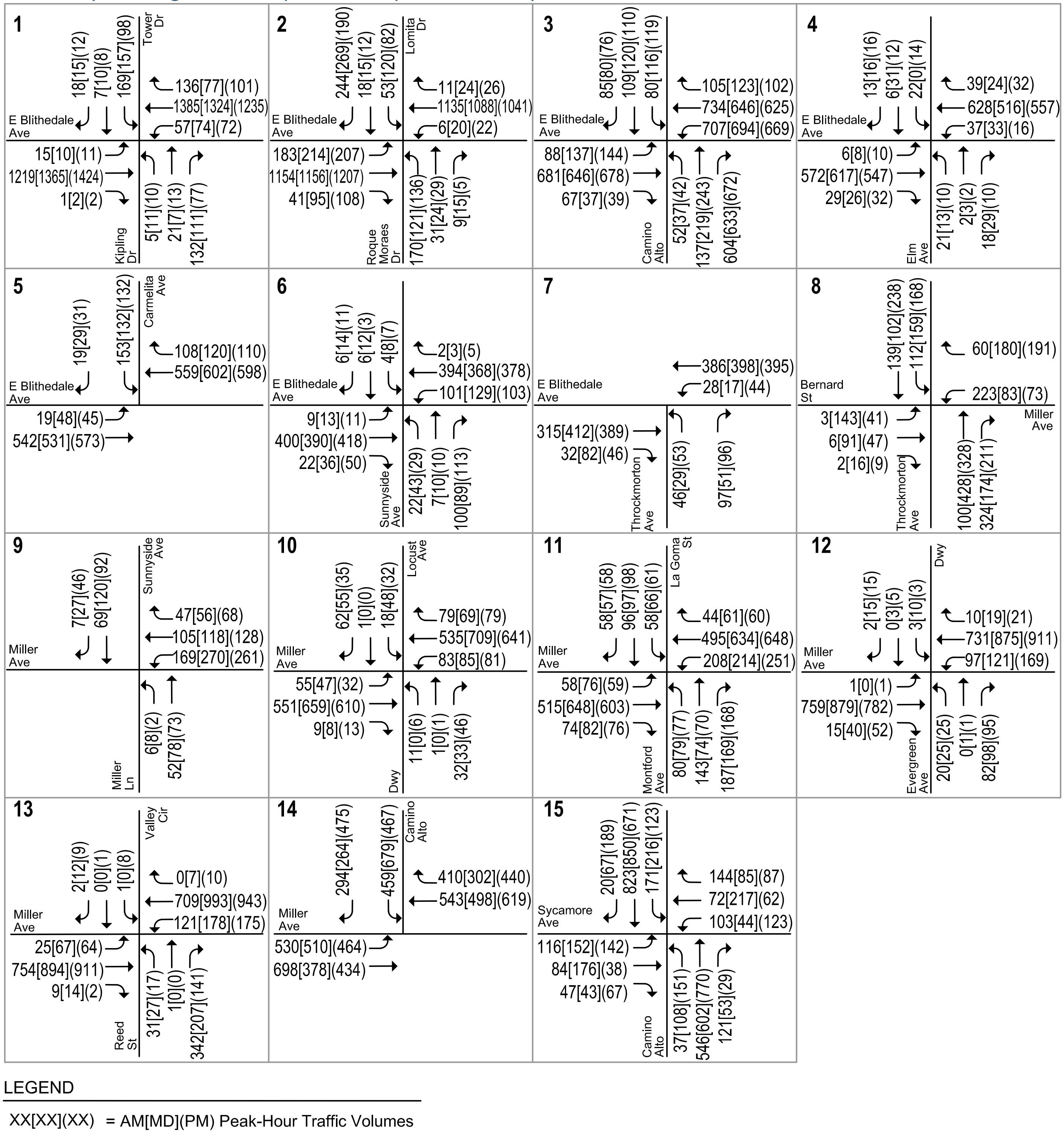


Figure 12
Cumulative Plus Project Traffic Volumes

Traffic Operations at Signalized Intersections

The results of the intersection level of service analysis are shown in Table 7. The detailed intersection level of service calculation sheets for all study scenarios are included in Appendix D.

Existing and Cumulative Conditions

Intersection levels of service were evaluated against the standards of the City of Mill Valley. The results of the analysis show that all signalized study intersections are operating at acceptable levels of service during the AM, mid-afternoon, and PM peak hours of traffic under existing conditions and would continue to do so under cumulative conditions.

Project Conditions

The results of the analysis show that the added project trips would not cause an adverse operational effect, as defined by Mill Valley, at any of the signalized study intersections.

Traffic Operations at Unsignalized Intersections

The study also evaluated nine unsignalized intersections.

The results of the analysis show that six of the unsignalized study intersections would operate with acceptable delays under all study scenarios. The following intersections would have an adverse effect under project conditions.

Carmelita Avenue & E. Blithedale Avenue Intersection

The Carmelita Avenue & E. Blithedale Avenue intersection has three approaches and is stop controlled on Carmelita Avenue (the southbound approach). During all three peak hours, Carmelita Avenue is estimated to experience long delays equivalent to LOS F under all study scenarios for the southbound approach. The added project trips to the eastbound and westbound through movements on E. Blithedale Avenue would increase the delay for the southbound approach during all peak hours. The peak-hour volume signal warrant analysis described below indicates that peak-hour volumes at the intersection would meet the peak-hour volume warrant under all scenarios, both with and without the project traffic. Therefore, the project would cause an adverse effect at the intersection under existing plus project and cumulative plus project conditions.

Improvement:

Restriping the southbound approach with a left turn lane and a right turn lane would reduce the delay for the southbound approach. However, it would continue to experience long delays equivalent to LOS F under all study scenarios, and the intersection would continue to be adversely affected under project conditions. Additional right-of-way would be needed to construct the additional turn lane.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS A under all scenarios.

Montford Avenue/La Goma Street & Miller Avenue Intersection

The Montford Avenue/La Goma Street & Miller Avenue intersection has four approaches and is stop controlled on all legs. During all three peak hours, the intersection is estimated to experience long average delays equivalent to LOS F under all study scenarios. The added project trips to nearly all movements would increase the average delay during all peak hours. The peak-hour volume signal warrant analysis described below indicates that peak-hour volumes at the intersection would meet the peak-hour volume warrant under all scenarios, both with and without the project traffic. Therefore, the project would cause an adverse effect at the intersection under existing plus project and cumulative plus project conditions.

Improvement:

The adverse effect at this intersection could be offset by the construction of a two-lane roundabout with a shared left-through lane and a shared through-right lane at the east and west approaches and a single shared lane at the north and south approaches. Right-of-way acquisition would be required to construct the roundabout or adjacent properties would be required to dedicate right-of-way when they redevelop. With a two-lane roundabout, the intersection would operate at an LOS A under all scenarios. Note that with a single lane roundabout, the LOS would remain an unacceptable E during at least one peak hour.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS B under all scenarios.

Reed Street/Valley Circle & Miller Avenue Intersection

The Reed Street/Valley Circle & Miller Avenue intersection has four approaches and is stop controlled on Reed Street (the northbound approach) and Valley Circle (the southbound approach). In addition, there is storage for two vehicles to queue within the center median. During the mid-afternoon peak hour, the northbound approach is estimated to experience long delays equivalent to LOS F under all study scenarios. During the PM peak hour, the southbound approach is estimated to experience long delays equivalent to LOS F under existing plus project conditions and both northbound and southbound approaches are estimated to experience long delays equivalent to LOS F under cumulative plus project conditions. The added project trips to the eastbound and westbound approaches on Miller Avenue would increase the delay for the southbound and northbound approaches. The peak-hour volume signal warrant analysis described below indicates that peak-hour volumes at the intersection would meet the peak-hour volume warrant under all scenarios, both with and without the project traffic. Since the intersection would operate at an LOS F and would meet the signal warrant during the mid-afternoon peak hour and the PM peak hour under project conditions, the project would result in an adverse effect during these peak hours under the existing plus project and cumulative plus project scenarios.

Improvement:

Restriping the northbound approach with a left turn lane and a right turn lane would reduce the delay. However, it would continue to experience long delays equivalent to LOS F under all study scenarios, and the intersection would continue to be adversely affected under project conditions. Additional right-of-way would be needed to include an additional turn lane.

The adverse effect at this intersection could be offset by the construction of a two-lane roundabout with a shared left-through lane and a shared through-right lane at the east and west approaches and a single shared lane at the north and south approaches. With the roundabout, the intersection would operate at an LOS A under all scenarios. Note that a single lane roundabout would result in LOS E operations during at least one peak hour.

Alternatively, a traffic signal could be installed at the intersection. With the addition of a traffic signal, the intersection would be expected to operate at an LOS B under all scenarios.

Peak-Hour Signal Warrant Analysis

In conjunction with the traffic operations analysis, a signal warrant analysis was performed to determine if the unsignalized intersections of Carmelita Avenue & E. Blithedale Avenue, Montford Avenue/La Goma Street & Miller Avenue, and Reed Street/Valley Circle & Miller Avenue would warrant traffic signals. These unsignalized study intersections were analyzed on the basis of the Peak-Hour Volume

Signal Warrant, (Warrant #3 – Part B) described in the *California Manual on Uniform Traffic Control Devices* (MUTCD), 2014 Edition. This method provides an indication of whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Additional analysis may include unsignalized intersection level of service analysis and/or operational analysis such as evaluating vehicle queuing and delay. The results of the peak-hour signal warrant checks indicate that all peak-hour volumes at the previously mentioned unsignalized study intersections would warrant signalization under existing, existing plus project, cumulative, and cumulative plus project conditions. The peak-hour signal warrant sheets are contained in Appendix E.

Table 7
Intersection Level of Service Summary

#	Intersection	Intersection Control	Peak Hour	Existing Conditions Delay[1] (sec)	Existing Conditions LOS	Existing + Project Delay[1] (sec)	Existing + Project LOS	Existing + Project Incr. in Delay	Cumulative Conditions Delay[1] (sec)	Cumulative Conditions LOS	Cumulative + Project Delay[1] (sec)	Cumulative + Project LOS	Cumulative + Project Incr. in Delay
1	Tower Drive/Kipling Drive & E. Blithedale Avenue	Signal	AM	33.8	C	34.6	C	0.8	35.1	D	36.0	D	0.9
			MD	20.6	C	20.7	C	0.1	21.3	C	21.4	C	0.1
			PM	16.9	B	17.1	B	0.2	17.6	B	17.8	B	0.2
2	Lomita Drive/Roque Moraes Drive & E. Blithedale Avenue	Signal	AM	44.2	D	46.1	D	1.9	44.5	D	46.8	D	2.3
			MD	54.9	D	48.1	D	-6.8	55.0	D	48.1	D	-6.9
			PM	48.2	D	42.4	D	-5.8	46.2	D	42.2	D	-4.0
3	Camino Alto & E. Blithedale Avenue	Signal	AM	43.2	D	45.9	D	2.7	43.6	D	46.5	D	2.9
			MD	47.5	D	48.8	D	1.3	48.5	D	49.9	D	1.4
			PM	48.0	D	51.0	D	3.0	49.0	D	52.8	D	3.8
4	Elm Avenue & E. Blithedale Avenue	Signal	AM	4.5	A	4.5	A	0.0	4.5	A	4.6	A	0.1
			MD	4.6	A	4.6	A	0.0	4.7	A	4.7	A	0.0
			PM	3.9	A	4.0	A	0.1	3.9	A	4.0	A	0.1
5	Carmelita Avenue & E. Blithedale Avenue	One-Way Stop	AM	**>50**	**F**	**>50**	**F**	**17.9**	**>50**	**F**	**>50**	**F**	**21.5**
			MD	**>50**	**F**	**>50**	**F**	**12.3**	**>50**	**F**	**>50**	**F**	**14.9**
			PM	**>50**	**F**	**>50**	**F**	**30.0**	**>50**	**F**	**>50**	**F**	**36.4**
6	Sunnyside Avenue & E. Blithedale Avenue	Two-Way Stop	AM	22.2	C	23.1	C	0.9	22.9	C	24.1	C	1.2
			MD	28.2	D	32.0	D	3.8	30.3	D	34.7	D	4.4
			PM	21.4	C	23.7	C	2.3	22.1	C	25.1	D	3.0
7	Throckmorton Avenue & E. Blithedale Avenue	All-Way Stop	AM	12.6	B	13.0	B	0.4	12.9	B	13.4	B	0.5
			MD	14.3	B	14.9	B	0.6	14.8	B	15.5	C	0.7
			PM	14.3	B	15.9	C	1.6	15.1	C	16.6	C	1.5

Notes:

MD = Mid-Afternoon peak hour

1. The delay reported for the signalized intersections and all-way stop controlled intersections is the average stopped delay for all vehicles entering the intersection. The delay reported for the side-street stop controlled intersections is the delay experienced by vehicles on the worst stop controlled movement.

Bold Indicates substandard level of service

$\boxed{\textbf{Bold}}$ The project would cause an adverse effect.

Table 7 (continued)
Intersection Level of Service Summary

#	Intersection	Intersection Control	Peak Hour	Existing Conditions Delay[1] (sec)	Existing Conditions LOS	Existing + Project Delay[1] (sec)	Existing + Project LOS	Existing + Project Incr. in Delay	Cumulative Conditions Delay[1] (sec)	Cumulative Conditions LOS	Cumulative + Project Delay[1] (sec)	Cumulative + Project LOS	Cumulative + Project Incr. in Delay
8	Throckmorton Avenue & Bernard Street/Miller Avenue	All-Way Stop	AM	12.5	B	12.8	B	0.3	12.7	B	13.1	B	0.4
			MD	28.3	D	29.7	D	1.4	31.3	D	33.0	D	1.7
			PM	19.1	C	20.2	C	1.1	20.3	C	21.5	C	1.2
9	Sunnyside Avenue & Miller Avenue	All-Way Stop	AM	8.9	A	9.1	A	0.2	9.0	A	9.2	A	0.2
			MD	10.6	B	10.9	B	0.3	10.8	B	11.0	B	0.2
			PM	10.2	B	10.6	B	0.4	10.4	B	10.7	B	0.3
10	Locust Avenue & Miller Avenue	Two-Way Stop	AM	14.9	B	15.1	C	0.2	15.2	C	15.4	C	0.2
			MD	25.4	D	27.3	D	1.9	26.8	D	28.8	D	2.0
			PM	18.9	C	20.4	C	1.5	19.6	C	21.2	C	1.6
11	Montford Avenue/La Goma Street & Miller Avenue	All-Way Stop	AM	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**5.8**	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**7.5**
			MD	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**20.2**	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**21.5**
			PM	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**26.0**	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**27.9**
12	Evergreen Avenue & Miller Avenue	Two-Way Stop	AM	19.4	C	20.0	C	0.6	20.0	C	20.5	C	0.5
			MD	25.0	C	26.2	D	1.2	26.2	D	27.7	D	1.5
			PM	26.3	D	28.8	D	2.5	27.9	D	31.0	D	3.1
13	Reed Street/Valley Circle & Miller Avenue	Two-Way Stop	AM	28.6	D	32.4	D	3.8	31.7	D	36.3	E	4.6
			MD	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**>50**	**>50**	**F**	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**>50**
			PM	39.1	E	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**17.4**	45.1	E	$\boxed{\textbf{>50}}$	$\boxed{\textbf{F}}$	**43.7**
14	Camino Alto & Miller Avenue	Signal	AM	23.7	C	25.0	C	1.3	24.1	C	25.5	C	1.4
			MD	25.1	C	26.6	C	1.5	25.8	C	27.6	C	1.8
			PM	32.2	C	35.3	D	3.1	33.9	C	37.2	D	3.3
15	Camino Alto & Sycamore Avenue	Signal	AM	27.1	C	29.6	C	2.5	28.5	C	31.4	C	2.9
			MD	29.7	C	31.3	C	1.6	31.3	C	33.0	C	1.7
			PM	25.4	C	28.5	C	3.1	26.7	C	30.1	C	3.4

Notes:

MD = Mid-Afternoon peak hour

1. The delay reported for the signalized intersections and all-way stop controlled intersections is the average stopped delay for all vehicles entering the intersection. The delay reported for the side-street stop controlled intersections is the delay experienced by vehicles on the worst stop controlled movement.

Bold Indicates substandard level of service

$\boxed{\textbf{Bold}}$ The project would cause an adverse effect.

Mill Valley Housing Element Update
Transportation Analysis

Technical Appendices

October 26, 2022

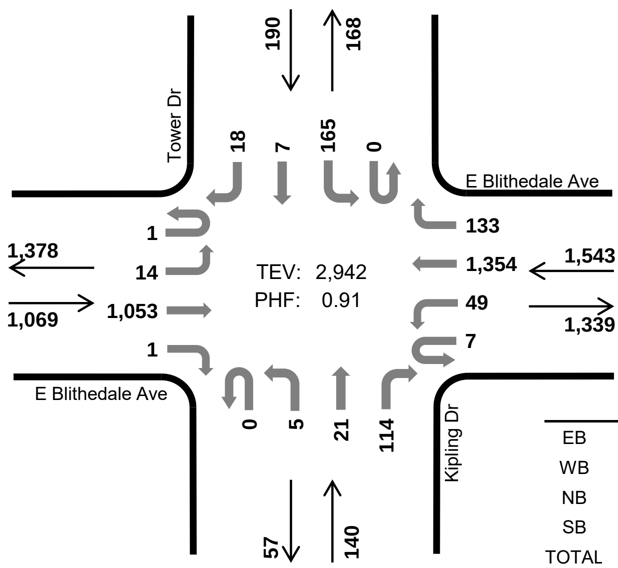
Appendix A

Traffic Counts

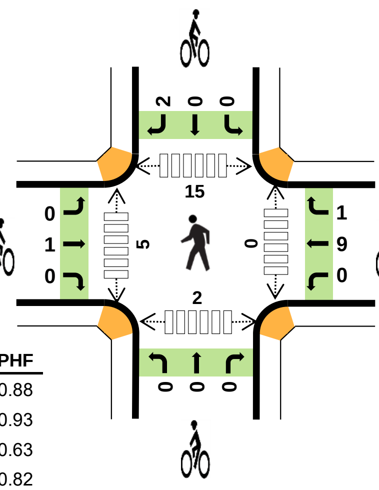
Tower Dr
E Blithedale Ave

Date: 03/10/2022
Count Period: 7:45 AM to 9:15 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour



	HV %:	PHF
EB	3.5%	0.88
WB	4.1%	0.93
NB	0.0%	0.63
SB	0.5%	0.82
TOTAL	3.4%	0.91



Count Summaries

Interval Start		E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Kipling Dr Northbound UT	LT	TH	RT	Tower Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:45 AM		1	2	256	0	1	5	340	20	0	1	0	28	0	27	0	4	685	0
8:00 AM		0	5	218	1	1	13	360	41	0	2	5	29	0	38	1	5	719	0
8:15 AM		0	4	280	0	3	16	349	41	0	1	16	39	0	49	2	7	807	0
8:30 AM		0	3	299	0	2	15	305	31	0	1	0	18	0	51	4	2	731	2,942
Peak Hour	All	1	14	1,053	1	7	49	1,354	133	0	5	21	114	0	165	7	18	2,942	0
	HV	0	0	37	0	0	0	57	6	0	0	0	0	0	1	0	0	101	0
	HV%	0%	0%	4%	0%	0%	0%	4%	5%	-	0%	0%	0%	-	1%	0%	0%	3%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:45 AM	6	8	0	0	*14*	1	0	0	0	*1*	0	2	0	0	*2*
8:00 AM	7	31	0	0	*38*	0	6	0	1	*7*	0	0	8	0	*8*
8:15 AM	11	9	0	0	*20*	0	3	0	1	*4*	0	2	5	1	*8*
8:30 AM	13	15	0	1	*29*	0	1	0	0	*1*	0	1	2	1	*4*
Peak Hour	37	63	0	1	*101*	1	10	0	2	*13*	0	5	15	2	*22*

Count Summaries

Interval Start	E Blithedale Ave				E Blithedale Ave				Kipling Dr				Tower Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM	**1**	**2**	**256**	**0**	**1**	**5**	**340**	**20**	**0**	**1**	**0**	**28**	**0**	**27**	**0**	**4**	**685**	0
8:00 AM	**0**	**5**	**218**	**1**	**1**	**13**	**360**	**41**	**0**	**2**	**5**	**29**	**0**	**38**	**1**	**5**	**719**	0
8:15 AM	**0**	**4**	**280**	**0**	**3**	**16**	**349**	**41**	**0**	**1**	**16**	**39**	**0**	**49**	**2**	**7**	**807**	0
8:30 AM	**0**	**3**	**299**	**0**	**2**	**15**	**305**	**31**	**0**	**1**	**0**	**18**	**0**	**51**	**4**	**2**	**731**	**2,942**
8:45 AM	0	0	249	2	1	4	294	20	0	2	0	29	0	44	3	1	649	2,906
9:00 AM	0	1	253	2	1	5	285	18	0	3	0	13	0	25	1	4	611	2,798
11:30 AM	0	2	298	0	3	8	290	12	0	4	0	10	0	21	1	3	652	2,643
11:45 AM	0	3	335	1	3	10	309	15	0	4	0	9	0	20	2	2	713	2,625
12:00 PM	1	3	307	2	0	10	263	22	0	1	0	12	0	20	0	3	644	2,620
12:15 PM	0	0	317	2	1	10	288	11	0	3	0	13	0	13	0	1	659	2,668
12:30 PM	0	4	286	2	1	13	304	12	0	4	1	22	0	19	2	3	673	2,689
12:45 PM	1	1	330	2	5	13	288	21	0	3	1	19	0	22	0	2	708	2,684
1:00 PM	0	4	291	0	0	11	261	22	0	1	2	20	0	24	1	7	644	2,684
1:15 PM	0	0	293	1	0	6	307	11	0	2	0	12	0	26	0	4	662	2,687
1:30 PM	1	1	273	0	1	8	282	8	0	0	0	10	0	18	0	4	606	2,620
1:45 PM	1	2	299	0	1	15	341	17	0	2	5	16	0	30	2	2	733	2,645
2:00 PM	0	4	317	0	1	10	258	18	0	2	4	8	0	28	2	3	655	2,656
2:15 PM	1	4	367	3	1	11	296	17	0	1	1	4	1	22	1	4	734	2,728
2:30 PM	1	4	367	3	6	8	309	23	0	1	1	20	0	11	0	2	756	2,878
2:45 PM	0	3	284	0	1	13	330	44	0	2	8	8	0	32	0	3	728	2,873
3:00 PM	0	2	363	0	0	16	286	29	0	2	4	24	0	41	6	4	777	2,995
3:15 PM	0	4	277	0	1	15	323	22	0	1	0	30	0	39	3	2	717	2,978
3:30 PM	0	2	330	1	2	19	344	16	0	6	0	30	0	46	0	3	799	3,021
3:45 PM	0	2	352	1	1	18	320	8	0	2	3	23	0	28	1	6	765	3,058
Count Total	1	15	1,555	5	9	58	1,933	171	0	10	21	156	0	234	11	23	4,202	0
Peak Hour All	**1**	**14**	**1,053**	**1**	**7**	**49**	**1,354**	**133**	**0**	**5**	**21**	**114**	**0**	**165**	**7**	**18**	**2,942**	**0**
Peak Hour HV	**0**	**0**	**37**	**0**	**0**	**0**	**57**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**101**	**0**
Peak Hour HV%	**0%**	**0%**	**4%**	**0%**	**0%**	**0%**	**4%**	**5%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**3%**	**0**

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:45 AM	**6**	**8**	**0**	**0**	***14***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**0**	**0**	*2*
8:00 AM	**7**	**31**	**0**	**0**	***38***	**0**	**6**	**0**	**1**	***7***	**0**	**0**	**8**	**0**	*8*
8:15 AM	**11**	**9**	**0**	**0**	***20***	**0**	**3**	**0**	**1**	***4***	**0**	**2**	**5**	**1**	*8*
8:30 AM	**13**	**15**	**0**	**1**	***29***	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**2**	**1**	***4***
8:45 AM	11	13	0	0	*24*	1	4	0	0	*5*	0	0	1	0	*1*
9:00 AM	8	10	0	0	*18*	0	2	0	0	*2*	0	0	2	0	*2*
11:30 AM	7	10	0	0	*17*	0	0	0	0	*0*	0	1	0	0	*1*
11:45 AM	12	9	0	0	*21*	0	1	0	1	*2*	0	0	1	0	*1*
12:00 PM	11	9	0	1	*21*	1	4	0	0	*5*	0	0	0	0	*0*
12:15 PM	13	11	0	1	*25*	2	1	1	1	*5*	1	3	0	1	*5*
12:30 PM	5	6	1	0	*12*	1	3	0	0	*4*	0	1	0	0	*1*
12:45 PM	10	10	0	1	*21*	0	1	0	0	*1*	0	0	1	0	*1*
1:00 PM	10	7	0	0	*17*	0	0	0	0	*0*	0	0	0	0	*0*
1:15 PM	13	7	0	0	*20*	0	1	0	1	*2*	0	0	0	0	*0*
1:30 PM	6	10	0	1	*17*	1	4	0	0	*5*	0	1	0	0	*1*
1:45 PM	9	10	0	0	*19*	1	3	0	0	*4*	0	0	2	0	*2*
2:00 PM	11	5	0	3	*19*	0	3	0	1	*4*	0	0	1	0	*1*
2:15 PM	11	10	0	0	*21*	0	4	0	0	*4*	0	0	1	0	*1*
2:30 PM	8	4	1	1	*14*	0	2	0	0	*2*	0	0	2	0	*2*
2:45 PM	8	4	0	2	*14*	2	1	0	0	*3*	0	0	0	0	*0*
3:00 PM	8	2	0	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
3:15 PM	5	2	0	0	*7*	2	3	0	1	*6*	0	0	4	0	*4*
3:30 PM	8	4	1	0	*13*	1	1	0	0	*2*	0	0	3	0	*3*
3:45 PM	14	3	0	0	*17*	3	1	0	0	*4*	0	0	4	0	*4*
Count Total	56	86	0	1	*143*	2	16	0	2	*20*	0	5	18	2	*25*
Peak Hour	**37**	**63**	**0**	**1**	***101***	**1**	**10**	**0**	**2**	***13***	**0**	**5**	**15**	**2**	***22***

Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Kipling Dr				Tower Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM	**0**	**0**	**6**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	0
8:00 AM	**0**	**0**	**7**	**0**	**0**	**0**	**27**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**38**	0
8:15 AM	**0**	**0**	**11**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	0
8:30 AM	**0**	**0**	**13**	**0**	**0**	**0**	**14**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**29**	**101**
8:45 AM	0	0	11	0	0	0	12	1	0	0	0	0	0	0	0	0	24	111
9:00 AM	0	0	8	0	0	0	7	3	0	0	0	0	0	0	0	0	18	91
11:30 AM	0	0	7	0	0	0	10	0	0	0	0	0	0	0	0	0	17	88
11:45 AM	0	0	12	0	0	0	9	0	0	0	0	0	0	0	0	0	21	80
12:00 PM	0	0	11	0	0	0	7	2	0	0	0	0	0	1	0	0	21	77
12:15 PM	0	0	13	0	0	0	11	0	0	0	0	0	0	1	0	0	25	84
12:30 PM	0	0	5	0	0	0	6	0	0	0	0	1	0	0	0	0	12	79
12:45 PM	0	0	10	0	0	0	10	0	0	0	0	0	0	1	0	0	21	79
1:00 PM	0	0	10	0	0	0	6	1	0	0	0	0	0	0	0	0	17	75
1:15 PM	0	0	13	0	0	0	6	1	0	0	0	0	0	0	0	0	20	70
1:30 PM	0	0	6	0	0	0	9	1	0	0	0	0	0	1	0	0	17	75
1:45 PM	0	0	9	0	0	0	9	1	0	0	0	0	0	0	0	0	19	73
2:00 PM	0	0	11	0	0	0	5	0	0	0	0	0	0	2	1	0	19	75
2:15 PM	0	0	11	0	0	0	10	0	0	0	0	0	0	0	0	0	21	76
2:30 PM	0	0	8	0	0	0	4	0	0	0	1	0	0	1	0	0	14	73
2:45 PM	0	0	8	0	0	0	3	1	0	0	0	0	0	2	0	0	14	68
3:00 PM	0	0	8	0	0	0	2	0	0	0	0	0	0	0	0	0	10	59
3:15 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	45
3:30 PM	0	0	8	0	0	0	4	0	0	0	0	1	0	0	0	0	13	44
3:45 PM	0	0	14	0	0	0	3	0	0	0	0	0	0	0	0	0	17	47
Count Total	0	0	56	0	0	0	76	10	0	0	0	0	0	1	0	0	143	0
Peak Hour	**0**	**0**	**37**	**0**	**0**	**0**	**57**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**101**	**0**

Count Summaries - Bikes

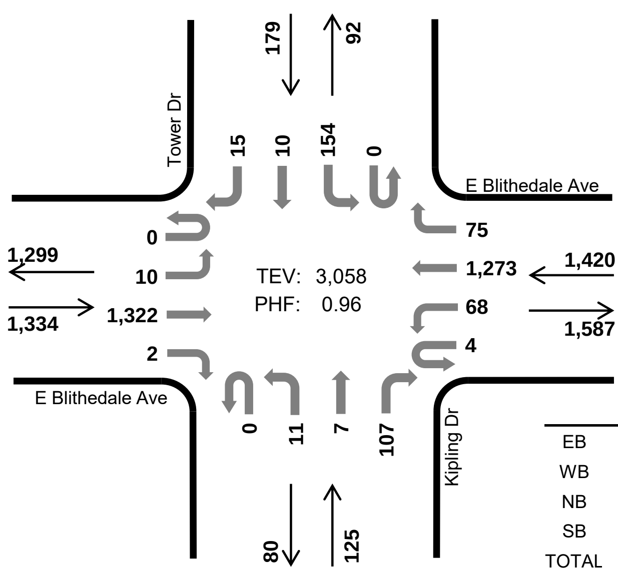
Interval Start	E Blithedale Ave			E Blithedale Ave			Kipling Dr			Tower Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
8:00 AM	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**7**	0
8:15 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	0
8:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**
8:45 AM	0	0	1	0	3	1	0	0	0	0	0	0	5	17
9:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	2	12
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
11:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2	9
12:00 PM	0	1	0	0	4	0	0	0	0	0	0	0	5	9
12:15 PM	0	2	0	0	1	0	0	1	0	0	1	0	5	12
12:30 PM	0	0	1	0	2	1	0	0	0	0	0	0	4	16
12:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	15
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1:15 PM	0	0	0	0	1	0	0	0	0	0	0	1	2	7
1:30 PM	0	1	0	0	4	0	0	0	0	0	0	0	5	8
1:45 PM	0	1	0	0	3	0	0	0	0	0	0	0	4	11
2:00 PM	0	0	0	0	2	1	0	0	0	0	0	1	4	15
2:15 PM	0	0	0	0	4	0	0	0	0	0	0	0	4	17
2:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	14
2:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	13
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	9
3:15 PM	0	2	0	0	3	0	0	0	0	0	1	0	6	11
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	11
3:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	4	12
Count Total	0	1	1	0	13	3	0	0	0	0	0	2	20	0
Peak Hour	**0**	**1**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**13**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

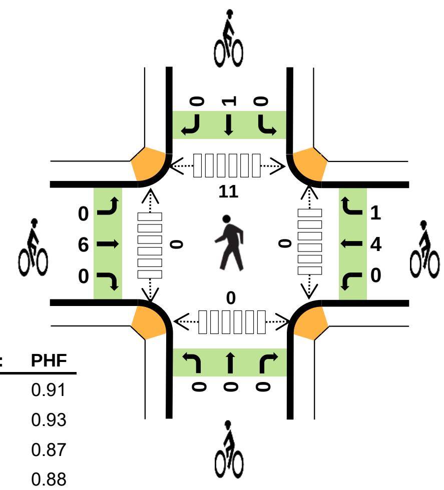
Tower Dr
E Blithedale Ave

Date: 03/10/2022
Count Period: 2:00 PM to 4:00 PM
Peak Hour: 3:00 PM to 4:00 PM

Peak Hour



	HV %:	PHF
EB	2.6%	0.91
WB	0.8%	0.93
NB	0.8%	0.87
SB	0.0%	0.88
TOTAL	1.5%	0.96



Two-Hour Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Kipling Dr Northbound UT	LT	TH	RT	Tower Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
2:00 PM	0	4	317	0	1	10	258	18	0	2	4	8	0	28	2	3	655	0
2:15 PM	1	4	367	3	1	11	296	17	0	1	1	4	1	22	1	4	734	0
2:30 PM	1	4	367	3	6	8	309	23	0	1	1	20	0	11	0	2	756	0
2:45 PM	0	3	284	0	1	13	330	44	0	2	8	8	0	32	0	3	728	2,873
3:00 PM	**0**	**2**	**363**	**0**	**0**	**16**	**286**	**29**	**0**	**2**	**4**	**24**	**0**	**41**	**6**	**4**	**777**	2,995
3:15 PM	**0**	**4**	**277**	**0**	**1**	**15**	**323**	**22**	**0**	**1**	**0**	**30**	**0**	**39**	**3**	**2**	**717**	2,978
3:30 PM	**0**	**2**	**330**	**1**	**2**	**19**	**344**	**16**	**0**	**6**	**0**	**30**	**0**	**46**	**0**	**3**	**799**	3,021
3:45 PM	**0**	**2**	**352**	**1**	**1**	**18**	**320**	**8**	**0**	**2**	**3**	**23**	**0**	**28**	**1**	**6**	**765**	**3,058**
Count Total	2	25	2,657	8	13	110	2,466	177	0	17	21	147	1	247	13	27	5,931	0
Peak Hour All	**0**	**10**	**1,322**	**2**	**4**	**68**	**1,273**	**75**	**0**	**11**	**7**	**107**	**0**	**154**	**10**	**15**	**3,058**	**0**
Peak Hour HV	**0**	**0**	**35**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**47**	**0**
Peak Hour HV%	**-**	**0%**	**3%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**1%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
2:00 PM	11	5	0	3	*19*	0	3	0	1	*4*	0	0	1	0	*1*
2:15 PM	11	10	0	0	*21*	0	4	0	0	*4*	0	0	1	0	*1*
2:30 PM	8	4	1	1	*14*	0	2	0	0	*2*	0	0	2	0	*2*
2:45 PM	8	4	0	2	*14*	2	1	0	0	*3*	0	0	0	0	*0*
3:00 PM	**8**	**2**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:15 PM	**5**	**2**	**0**	**0**	***7***	**2**	**3**	**0**	**1**	***6***	**0**	**0**	**4**	**0**	*4*
3:30 PM	**8**	**4**	**1**	**0**	***13***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**3**	**0**	*3*
3:45 PM	**14**	**3**	**0**	**0**	***17***	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**4**	**0**	***4***
Count Total	73	34	2	6	*115*	8	15	0	2	*25*	0	0	15	0	*15*
Peak Hour	**35**	**11**	**1**	**0**	***47***	**6**	**5**	**0**	**1**	***12***	**0**	**0**	**11**	**0**	***11***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Kipling Dr				Tower Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	11	0	0	0	5	0	0	0	0	0	0	2	1	0	19	0
2:15 PM	0	0	11	0	0	0	10	0	0	0	0	0	0	0	0	0	21	0
2:30 PM	0	0	8	0	0	0	4	0	0	0	1	0	0	1	0	0	14	0
2:45 PM	0	0	8	0	0	0	3	1	0	0	0	0	0	2	0	0	14	68
3:00 PM	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	59
3:15 PM	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	45
3:30 PM	**0**	**0**	**8**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**13**	44
3:45 PM	**0**	**0**	**14**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**47**
Count Total	0	0	73	0	0	0	33	1	0	0	1	1	0	5	1	0	115	0
Peak Hour	**0**	**0**	**35**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**47**	**0**

Two-Hour Count Summaries - Bikes

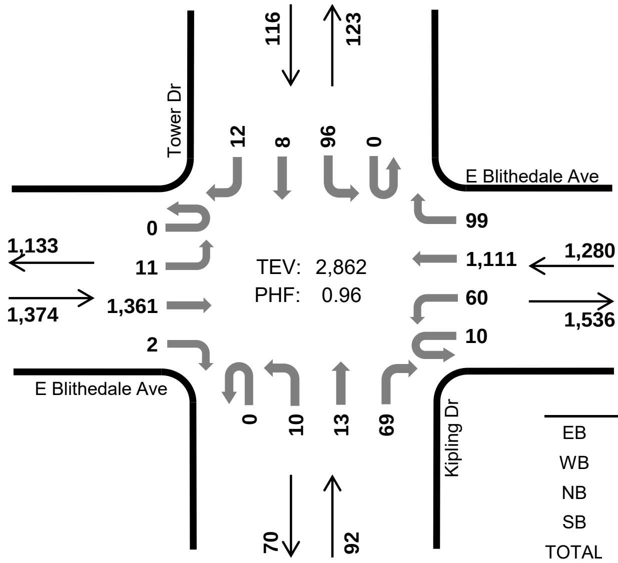
Interval Start	E Blithedale Ave			E Blithedale Ave			Kipling Dr			Tower Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	2	1	0	0	0	0	0	1	4	0
2:15 PM	0	0	0	0	4	0	0	0	0	0	0	0	4	0
2:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	0
2:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	13
3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	9
3:15 PM	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	11
3:30 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
3:45 PM	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**12**
Count Total	0	8	0	0	13	2	0	0	0	0	1	1	25	0
Peak Hour	**0**	**6**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**12**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

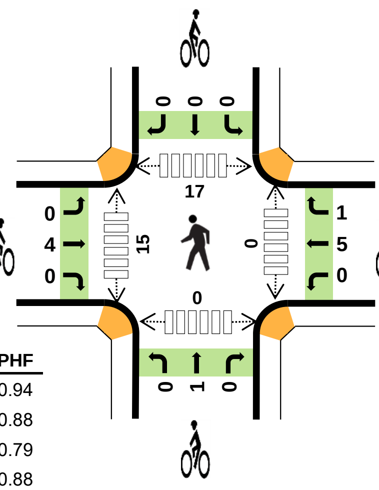
Tower Dr
E Blithedale Ave

Date: 03/10/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM

Peak Hour



	HV %:	PHF
EB	1.9%	0.94
WB	1.1%	0.88
NB	0.0%	0.79
SB	0.0%	0.88
TOTAL	1.4%	0.96



Two-Hour Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Kipling Dr Northbound UT	LT	TH	RT	Tower Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	3	362	0	2	11	252	24	0	2	7	11	0	28	3	2	707	0
4:15 PM	0	2	333	1	3	19	313	27	0	4	0	20	0	19	1	2	744	0
4:30 PM	0	3	325	1	4	13	253	19	0	2	4	13	0	27	0	5	669	0
4:45 PM	0	3	341	0	1	17	293	29	0	2	2	25	0	22	4	3	742	2,862
5:00 PM	2	9	298	0	0	22	238	20	0	4	2	30	0	31	4	3	663	2,818
5:15 PM	0	5	319	5	1	19	269	32	0	4	2	29	0	32	1	7	725	2,799
5:30 PM	1	2	294	2	1	11	219	20	0	1	6	24	0	34	1	9	625	2,755
5:45 PM	1	3	265	2	1	16	269	27	0	1	1	23	0	19	0	3	631	2,644
Count Total	4	30	2,537	11	13	128	2,106	198	0	20	24	175	0	212	14	34	5,506	0
Peak Hour All	0	11	1,361	2	10	60	1,111	99	0	10	13	69	0	96	8	12	2,862	0
Peak Hour HV	0	0	26	0	1	1	11	1	0	0	0	0	0	0	0	0	40	0
Peak Hour HV%	-	0%	2%	0%	10%	2%	1%	1%	-	0%	0%	0%	-	0%	0%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	5	2	0	0	7	2	2	0	0	4	0	3	4	0	7
4:15 PM	5	7	0	0	12	1	1	0	0	2	0	4	3	0	7
4:30 PM	10	2	0	0	12	0	2	1	0	3	0	5	6	0	11
4:45 PM	6	3	0	0	9	1	1	0	0	2	0	3	4	0	7
5:00 PM	6	0	1	0	7	1	0	0	0	1	0	1	4	1	6
5:15 PM	3	1	0	0	4	1	4	0	1	6	0	0	4	0	4
5:30 PM	3	1	0	0	4	1	5	0	0	6	0	2	3	0	5
5:45 PM	3	3	0	0	6	2	1	0	0	3	0	2	0	0	2
Count Total	41	19	1	0	61	9	16	1	1	27	0	20	28	1	49
Peak Hour	26	14	0	0	40	4	6	1	0	11	0	15	17	0	32

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Kipling Dr				Tower Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	0
4:15 PM	**0**	**0**	**5**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
4:30 PM	**0**	**0**	**10**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
4:45 PM	**0**	**0**	**6**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**40**
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	7	40
5:15 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	32
5:30 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	24
5:45 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	21
Count Total	0	0	41	0	1	1	16	1	0	0	0	1	0	0	0	0	61	0
Peak Hour	**0**	**0**	**26**	**0**	**1**	**1**	**11**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**0**

Two-Hour Count Summaries - Bikes

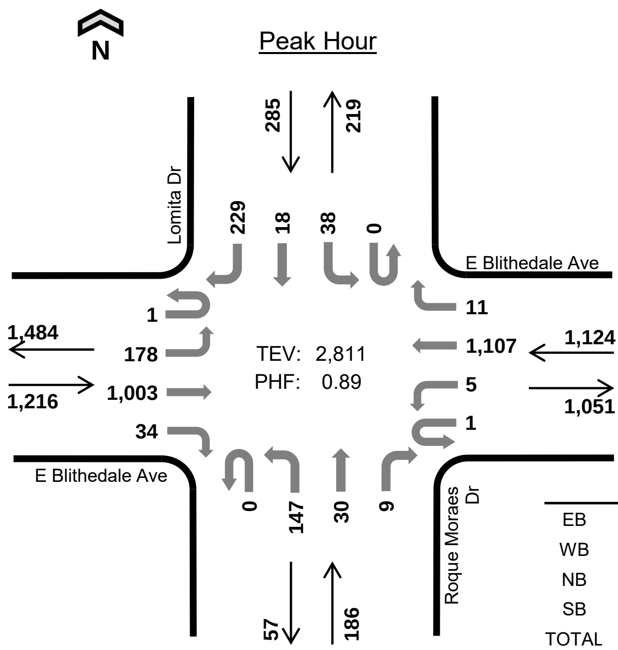
Interval Start	E Blithedale Ave			E Blithedale Ave			Kipling Dr			Tower Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	0
4:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:30 PM	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	0
4:45 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**11**
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
5:15 PM	0	1	0	0	3	1	0	0	0	0	0	1	6	12
5:30 PM	0	1	0	0	5	0	0	0	0	0	0	0	6	15
5:45 PM	0	2	0	0	0	1	0	0	0	0	0	0	3	16
Count Total	0	9	0	0	13	3	0	1	0	0	0	1	27	0
Peak Hour	**0**	**4**	**0**	**0**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**11**	**0**

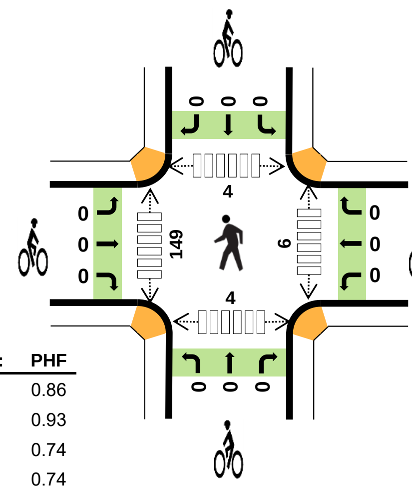
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lomita Dr
E Blithedale Ave

Date: 03/10/2022
Count Period: 7:45 AM to 9:15 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	2.2%	0.86
WB	3.8%	0.93
NB	2.7%	0.74
SB	5.6%	0.74
TOTAL	3.2%	0.89

Count Summaries

Interval Start		E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Roque Moraes Dr Northbound UT	LT	TH	RT	Lomita Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
8:00 AM		0	44	222	7	0	0	283	1	0	38	10	3	0	6	2	43	659	0
8:15 AM		0	66	273	13	0	1	280	4	0	52	10	1	0	11	6	73	790	0
8:30 AM		0	46	263	7	1	2	249	1	0	34	6	2	0	13	6	77	707	0
8:45 AM		1	22	245	7	0	2	295	5	0	23	4	3	0	8	4	36	655	2,811
Peak Hour	All	1	178	1,003	34	1	5	1,107	11	0	147	30	9	0	38	18	229	2,811	0
	HV	0	2	24	1	0	0	41	2	0	4	1	0	0	11	0	5	91	0
	HV%	0%	1%	2%	3%	0%	0%	4%	18%	-	3%	3%	0%	-	29%	0%	2%	3%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
8:00 AM	6	9	1	2	*18*	0	0	0	0	*0*	0	49	0	1	*50*
8:15 AM	5	12	2	7	*26*	0	0	0	0	*0*	1	58	2	2	*63*
8:30 AM	8	8	1	4	*21*	0	0	0	0	*0*	2	31	1	0	*34*
8:45 AM	8	14	1	3	*26*	0	0	0	0	*0*	3	11	1	1	*16*
Peak Hour	27	43	5	16	*91*	0	0	0	0	*0*	6	149	4	4	*163*

Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Roque Moraes Dr Northbound UT	LT	TH	RT	Lomita Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:45 AM	0	26	236	5	0	0	303	3	0	24	4	5	0	12	1	32	651	0
8:00 AM	**0**	**44**	**222**	**7**	**0**	**0**	**283**	**1**	**0**	**38**	**10**	**3**	**0**	**6**	**2**	**43**	**659**	0
8:15 AM	**0**	**66**	**273**	**13**	**0**	**1**	**280**	**4**	**0**	**52**	**10**	**1**	**0**	**11**	**6**	**73**	**790**	0
8:30 AM	**0**	**46**	**263**	**7**	**1**	**2**	**249**	**1**	**0**	**34**	**6**	**2**	**0**	**13**	**6**	**77**	**707**	2,807
8:45 AM	**1**	**22**	**245**	**7**	**0**	**2**	**295**	**5**	**0**	**23**	**4**	**3**	**0**	**8**	**4**	**36**	**655**	**2,811**
9:00 AM	2	38	224	6	0	6	236	4	0	23	5	5	0	15	3	26	593	2,745
11:30 AM	2	38	272	7	2	1	269	9	0	12	7	2	0	22	1	39	683	2,638
11:45 AM	1	64	245	8	2	5	227	6	0	30	9	3	0	23	7	42	672	2,603
12:00 PM	2	47	273	12	1	2	221	9	0	26	8	3	0	24	2	51	681	2,629
12:15 PM	2	28	233	8	3	0	256	3	0	23	5	1	0	40	1	45	648	2,684
12:30 PM	2	42	258	12	2	3	248	1	0	13	6	1	0	21	1	30	640	2,641
12:45 PM	2	36	258	9	1	2	235	7	0	23	5	2	0	37	3	41	661	2,630
1:00 PM	4	54	274	7	0	4	217	5	0	22	6	3	0	15	5	35	651	2,600
1:15 PM	3	50	221	9	2	4	226	3	0	35	6	4	0	27	4	47	641	2,593
1:30 PM	1	36	212	5	0	2	244	9	0	22	2	1	0	39	4	44	621	2,574
1:45 PM	4	37	248	16	0	1	260	4	0	20	9	0	0	25	3	39	666	2,579
2:00 PM	1	48	286	5	0	0	229	8	0	21	9	2	0	43	5	38	695	2,623
2:15 PM	4	39	293	11	5	2	228	6	0	32	7	3	0	31	4	41	706	2,688
2:30 PM	3	61	273	10	2	3	239	3	0	32	9	1	0	31	2	47	716	2,783
2:45 PM	3	52	257	8	1	2	248	4	0	34	7	3	0	27	4	54	704	2,821
3:00 PM	1	62	311	15	0	4	244	6	0	19	6	6	0	33	6	67	780	2,906
3:15 PM	3	33	271	17	1	3	247	1	0	32	7	1	0	29	4	70	719	2,919
3:30 PM	0	45	226	13	4	5	260	8	0	28	5	5	0	25	3	60	687	2,890
3:45 PM	2	63	309	24	1	2	292	8	0	22	5	3	0	30	2	66	829	3,015
Count Total	3	242	1,463	45	1	11	1,646	18	0	194	39	19	0	65	22	287	4,055	0
Peak Hour All	**1**	**178**	**1,003**	**34**	**1**	**5**	**1,107**	**11**	**0**	**147**	**30**	**9**	**0**	**38**	**18**	**229**	**2,811**	**0**
Peak Hour HV	**0**	**2**	**24**	**1**	**0**	**0**	**41**	**2**	**0**	**4**	**1**	**0**	**0**	**11**	**0**	**5**	**91**	**0**
Peak Hour HV%	**0%**	**1%**	**2%**	**3%**	**0%**	**0%**	**4%**	**18%**	**-**	**3%**	**3%**	**0%**	**-**	**29%**	**0%**	**2%**	**3%**	**0**

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:45 AM	4	8	0	2	*14*	0	0	0	0	*0*	1	13	1	0	*15*
8:00 AM	**6**	**9**	**1**	**2**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**49**	**0**	**1**	*50*
8:15 AM	**5**	**12**	**2**	**7**	***26***	**0**	**0**	**0**	**0**	***0***	**1**	**58**	**2**	**2**	*63*
8:30 AM	**8**	**8**	**1**	**4**	***21***	**0**	**0**	**0**	**0**	***0***	**2**	**31**	**1**	**0**	*34*
8:45 AM	**8**	**14**	**1**	**3**	***26***	**0**	**0**	**0**	**0**	***0***	**3**	**11**	**1**	**1**	***16***
9:00 AM	7	6	1	1	*15*	0	0	0	0	*0*	3	13	0	2	*18*
11:30 AM	10	7	0	2	*19*	0	0	1	0	*1*	1	9	0	1	*11*
11:45 AM	11	9	1	0	*21*	0	1	0	0	*1*	1	9	1	0	*11*
12:00 PM	8	8	1	1	*18*	0	0	2	1	*3*	2	19	1	3	*25*
12:15 PM	10	8	0	0	*18*	2	0	0	1	*3*	1	13	2	2	*18*
12:30 PM	6	6	0	0	*12*	0	0	1	0	*1*	1	15	10	1	*27*
12:45 PM	8	6	0	3	*17*	0	0	0	0	*0*	2	17	2	1	*22*
1:00 PM	13	6	0	1	*20*	0	0	0	0	*0*	0	8	0	0	*8*
1:15 PM	10	7	1	1	*19*	0	0	2	2	*4*	2	9	0	5	*16*
1:30 PM	7	9	0	0	*16*	0	1	0	0	*1*	1	11	3	1	*16*
1:45 PM	7	4	0	1	*12*	1	0	1	0	*2*	2	13	1	3	*19*
2:00 PM	15	5	1	3	*24*	0	0	0	0	*0*	0	12	6	0	*18*
2:15 PM	14	7	1	0	*22*	0	0	0	0	*0*	6	17	0	2	*25*
2:30 PM	8	3	0	2	*13*	1	0	0	0	*1*	2	10	2	3	*17*
2:45 PM	12	3	0	0	*15*	1	0	0	2	*3*	0	18	0	3	*21*
3:00 PM	7	2	0	0	*9*	1	0	0	0	*1*	0	63	4	2	*69*
3:15 PM	5	2	0	0	*7*	0	1	0	0	*1*	2	53	13	2	*70*
3:30 PM	9	2	0	0	*11*	0	1	0	0	*1*	1	25	4	3	*33*
3:45 PM	12	3	0	1	*16*	1	0	0	0	*1*	3	38	7	2	*50*
Count Total	38	57	6	19	*120*	0	0	0	0	*0*	10	175	5	6	*196*
Peak Hour	**27**	**43**	**5**	**16**	***91***	**0**	**0**	**0**	**0**	***0***	**6**	**149**	**4**	**4**	***163***

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Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Roque Moraes Dr				Lomita Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM	0	0	4	0	0	0	7	1	0	0	0	0	0	2	0	0	14	0
8:00 AM	**0**	**2**	**4**	**0**	**0**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**18**	0
8:15 AM	**0**	**0**	**5**	**0**	**0**	**0**	**12**	**0**	**0**	**1**	**1**	**0**	**0**	**6**	**0**	**1**	**26**	0
8:30 AM	**0**	**0**	**8**	**0**	**0**	**0**	**7**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**21**	79
8:45 AM	**0**	**0**	**7**	**1**	**0**	**0**	**13**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**1**	**26**	**91**
9:00 AM	0	0	7	0	0	0	5	1	0	1	0	0	0	1	0	0	15	88
11:30 AM	0	0	10	0	0	0	7	0	0	0	0	0	0	0	0	2	19	81
11:45 AM	0	0	11	0	0	0	8	1	0	1	0	0	0	0	0	0	21	81
12:00 PM	0	0	8	0	0	0	6	2	0	1	0	0	0	1	0	0	18	73
12:15 PM	0	1	9	0	0	0	8	0	0	0	0	0	0	0	0	0	18	76
12:30 PM	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	12	69
12:45 PM	0	1	7	0	0	0	5	1	0	0	0	0	0	2	0	1	17	65
1:00 PM	0	1	12	0	0	0	6	0	0	0	0	0	0	1	0	0	20	67
1:15 PM	0	0	10	0	0	0	7	0	0	1	0	0	0	1	0	0	19	68
1:30 PM	0	1	6	0	0	0	7	2	0	0	0	0	0	0	0	0	16	72
1:45 PM	0	1	6	0	0	0	4	0	0	0	0	0	0	1	0	0	12	67
2:00 PM	0	1	14	0	0	0	5	0	0	1	0	0	0	1	0	2	24	71
2:15 PM	0	0	12	2	0	0	7	0	0	0	1	0	0	0	0	0	22	74
2:30 PM	0	0	8	0	0	0	3	0	0	0	0	0	0	2	0	0	13	71
2:45 PM	0	0	12	0	0	0	3	0	0	0	0	0	0	0	0	0	15	74
3:00 PM	0	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	9	59
3:15 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	44
3:30 PM	0	0	8	1	0	0	2	0	0	0	0	0	0	0	0	0	11	42
3:45 PM	0	0	12	0	0	0	3	0	0	0	0	0	0	1	0	0	16	43
Count Total	0	2	35	1	0	0	53	4	0	5	1	0	0	14	0	5	120	0
Peak Hour	**0**	**2**	**24**	**1**	**0**	**0**	**41**	**2**	**0**	**4**	**1**	**0**	**0**	**11**	**0**	**5**	**91**	**0**

Count Summaries - Bikes

Interval Start	E Blithedale Ave			E Blithedale Ave			Roque Moraes Dr			Lomita Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:45 AM	0	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**	0
8:15 AM	**0**	**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**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	2
12:00 PM	0	0	0	0	0	0	0	2	0	0	0	1	3	5
12:15 PM	0	2	0	0	0	0	0	0	0	1	0	0	3	8
12:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	8
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
1:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	4	5
1:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	5
1:45 PM	0	0	1	0	0	0	0	0	1	0	0	0	2	7
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	3
2:45 PM	0	1	0	0	0	0	0	0	0	0	1	1	3	4
3:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	5
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	6
3:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	6
3:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	4
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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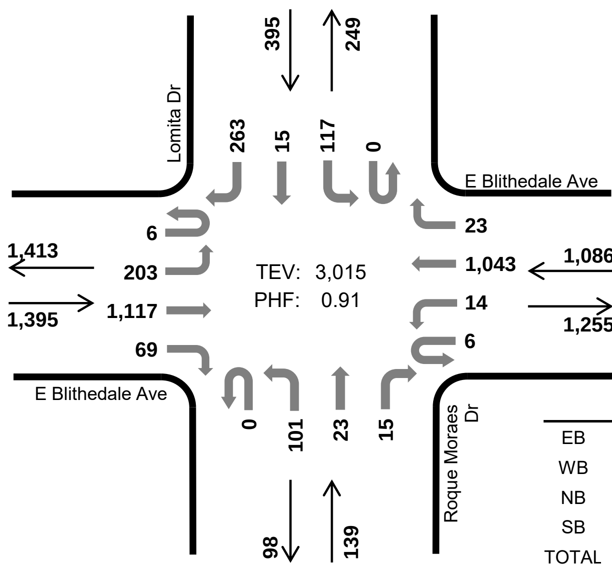
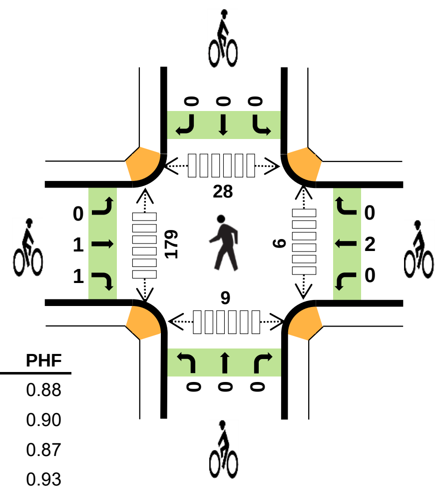
Lomita Dr
E Blithedale Ave

Date: 03/10/2022
Count Period: 2:00 PM to 4:00 PM
Peak Hour: 3:00 PM to 4:00 PM

Peak Hour





	HV %:	PHF
EB	2.4%	0.88
WB	0.8%	0.90
NB	0.0%	0.87
SB	0.3%	0.93
TOTAL	1.4%	0.91

Two-Hour Count Summaries

Interval Start		E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Roque Moraes Dr Northbound UT	LT	TH	RT	Lomita Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
2:00 PM		1	48	286	5	0	0	229	8	0	21	9	2	0	43	5	38	695	0
2:15 PM		4	39	293	11	5	2	228	6	0	32	7	3	0	31	4	41	706	0
2:30 PM		3	61	273	10	2	3	239	3	0	32	9	1	0	31	2	47	716	0
2:45 PM		3	52	257	8	1	2	248	4	0	34	7	3	0	27	4	54	704	2,821
3:00 PM		**1**	**62**	**311**	**15**	**0**	**4**	**244**	**6**	**0**	**19**	**6**	**6**	**0**	**33**	**6**	**67**	780	2,906
3:15 PM		**3**	**33**	**271**	**17**	**1**	**3**	**247**	**1**	**0**	**32**	**7**	**1**	**0**	**29**	**4**	**70**	719	2,919
3:30 PM		**0**	**45**	**226**	**13**	**4**	**5**	**260**	**8**	**0**	**28**	**5**	**5**	**0**	**25**	**3**	**60**	687	2,890
3:45 PM		**2**	**63**	**309**	**24**	**1**	**2**	**292**	**8**	**0**	**22**	**5**	**3**	**0**	**30**	**2**	**66**	**829**	**3,015**
Count Total		17	403	2,226	103	14	21	1,987	44	0	220	55	24	0	249	30	443	5,836	0
Peak Hour	**All**	**6**	**203**	**1,117**	**69**	**6**	**14**	**1,043**	**23**	**0**	**101**	**23**	**15**	**0**	**117**	**15**	**263**	**3,015**	**0**
	HV	**0**	**0**	**32**	**1**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**43**	**0**
	HV%	**0%**	**0%**	**3%**	**1%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
2:00 PM	15	5	1	3	*24*	0	0	0	0	*0*	0	12	6	0	*18*
2:15 PM	14	7	1	0	*22*	0	0	0	0	*0*	6	17	0	2	*25*
2:30 PM	8	3	0	2	*13*	1	0	0	0	*1*	2	10	2	3	*17*
2:45 PM	12	3	0	0	*15*	1	0	0	2	*3*	0	18	0	3	*21*
3:00 PM	**7**	**2**	**0**	**0**	***9***	**1**	**0**	**0**	**0**	***1***	**0**	**63**	**4**	**2**	*69*
3:15 PM	**5**	**2**	**0**	**0**	***7***	**0**	**1**	**0**	**0**	***1***	**2**	**53**	**13**	**2**	*70*
3:30 PM	**9**	**2**	**0**	**0**	***11***	**0**	**1**	**0**	**0**	***1***	**1**	**25**	**4**	**3**	*33*
3:45 PM	**12**	**3**	**0**	**1**	***16***	**1**	**0**	**0**	**0**	***1***	**3**	**38**	**7**	**2**	***50***
Count Total	82	27	2	6	*117*	4	2	0	2	*8*	14	236	36	17	*303*
Peak Hour	**33**	**9**	**0**	**1**	***43***	**2**	**2**	**0**	**0**	***4***	**6**	**179**	**28**	**9**	***222***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Roque Moraes Dr				Lomita Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	1	14	0	0	0	5	0	0	1	0	0	0	1	0	2	24	0
2:15 PM	0	0	12	2	0	0	7	0	0	0	1	0	0	0	0	0	22	0
2:30 PM	0	0	8	0	0	0	3	0	0	0	0	0	0	2	0	0	13	0
2:45 PM	0	0	12	0	0	0	3	0	0	0	0	0	0	0	0	0	15	74
3:00 PM	**0**	**0**	**7**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	59
3:15 PM	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	44
3:30 PM	**0**	**0**	**8**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	42
3:45 PM	**0**	**0**	**12**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**16**	**43**
Count Total	0	1	78	3	0	0	27	0	0	1	1	0	0	4	0	2	117	0
Peak Hour	**0**	**0**	**32**	**1**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**43**	**0**

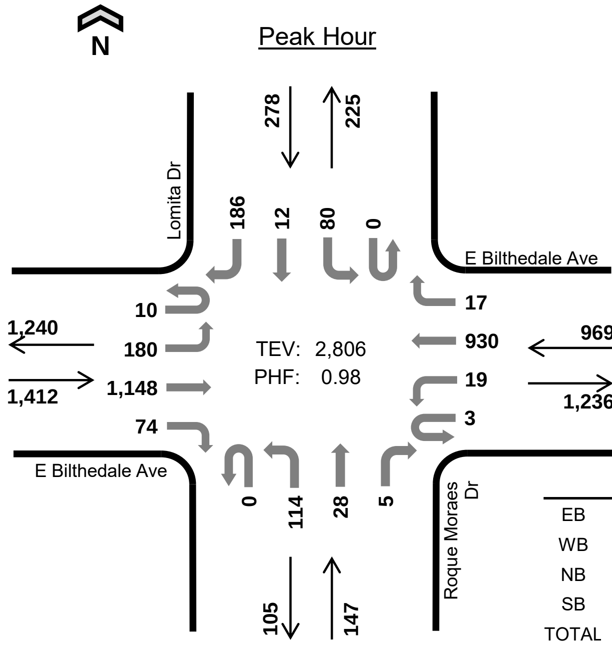
Two-Hour Count Summaries - Bikes

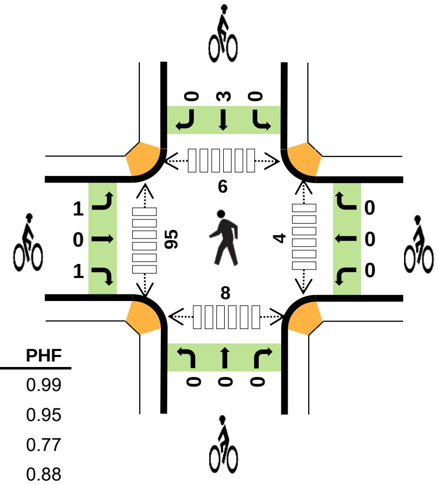
Interval Start	E Blithedale Ave			E Blithedale Ave			Roque Moraes Dr			Lomita Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0
2:45 PM	0	1	0	0	0	0	0	0	0	0	1	1	3	4
3:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
3:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
3:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
3:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
Count Total	1	2	1	0	2	0	0	0	0	0	1	1	8	0
Peak Hour	**0**	**1**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lomita Dr
E Bilthedale Ave

Date: 03/10/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	1.8%	0.99
WB	1.0%	0.95
NB	0.0%	0.77
SB	0.4%	0.88
TOTAL	1.3%	0.98

Two-Hour Count Summaries

Interval Start		E Bilthedale Ave Eastbound UT	LT	TH	RT	E Bilthedale Ave Westbound UT	LT	TH	RT	Roque Moraes Dr Northbound UT	LT	TH	RT	Lomita Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		1	51	292	15	0	2	203	2	0	26	8	2	0	22	4	69	697	0
4:15 PM		**3**	**49**	**291**	**14**	**0**	**3**	**245**	**7**	**0**	**28**	**2**	**3**	**0**	**16**	**2**	**53**	**716**	0
4:30 PM		**2**	**42**	**292**	**15**	**2**	**4**	**226**	**5**	**0**	**25**	**9**	**0**	**0**	**26**	**1**	**52**	**701**	0
4:45 PM		**1**	**52**	**283**	**19**	**0**	**4**	**232**	**2**	**0**	**25**	**7**	**0**	**0**	**20**	**3**	**38**	**686**	2,800
5:00 PM		**4**	**37**	**282**	**26**	**1**	**8**	**227**	**3**	**0**	**36**	**10**	**2**	**0**	**18**	**6**	**43**	**703**	**2,806**
5:15 PM		1	40	250	18	1	6	206	1	0	55	9	4	0	20	5	51	667	2,757
5:30 PM		3	43	272	18	1	4	215	1	0	63	12	8	0	23	6	41	710	2,766
5:45 PM		7	28	213	10	1	4	209	4	0	35	4	0	0	13	6	57	591	2,671
Count Total		22	342	2,175	135	6	35	1,763	25	0	293	61	19	0	158	33	404	5,471	0
Peak Hour	**All**	**10**	**180**	**1,148**	**74**	**3**	**19**	**930**	**17**	**0**	**114**	**28**	**5**	**0**	**80**	**12**	**186**	**2,806**	**0**
	HV	**0**	**1**	**23**	**1**	**0**	**1**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**36**	**0**
	HV%	**0%**	**1%**	**2%**	**1%**	**0%**	**5%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	6	0	1	1	*8*	1	0	0	1	*2*	0	29	3	2	*34*
4:15 PM	**6**	**6**	**0**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**2**	**13**	**1**	**4**	*20*
4:30 PM	**8**	**2**	**0**	**0**	***10***	**0**	**0**	**0**	**2**	***2***	**2**	**45**	**4**	**3**	*54*
4:45 PM	**5**	**2**	**0**	**0**	***7***	**1**	**0**	**0**	**1**	***2***	**0**	**12**	**0**	**0**	*12*
5:00 PM	**6**	**0**	**0**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**0**	**25**	**1**	**1**	***27***
5:15 PM	3	1	0	0	*4*	2	0	3	0	*5*	2	24	4	3	*33*
5:30 PM	3	0	1	1	*5*	0	0	0	1	*1*	0	16	3	1	*20*
5:45 PM	1	1	0	1	*3*	0	0	0	0	*0*	0	16	1	3	*20*
Count Total	38	12	2	4	*56*	5	0	3	5	*13*	6	180	17	17	*220*
Peak Hour	**25**	**10**	**0**	**1**	***36***	**2**	**0**	**0**	**3**	***5***	**4**	**95**	**6**	**8**	***113***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Bilthedale Ave				E Bilthedale Ave				Roque Moraes Dr				Lomita Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	5	0	0	0	0	0	0	1	0	0	0	1	0	0	8	0
4:15 PM	**0**	**1**	**5**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	0
4:30 PM	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	0
4:45 PM	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	38
5:00 PM	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**36**
5:15 PM	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	4	27
5:30 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	1	0	0	5	22
5:45 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	3	18
Count Total	1	2	33	2	0	1	10	1	0	1	1	0	0	2	0	2	56	0
Peak Hour	**0**	**1**	**23**	**1**	**0**	**1**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**36**	**0**

Two-Hour Count Summaries - Bikes

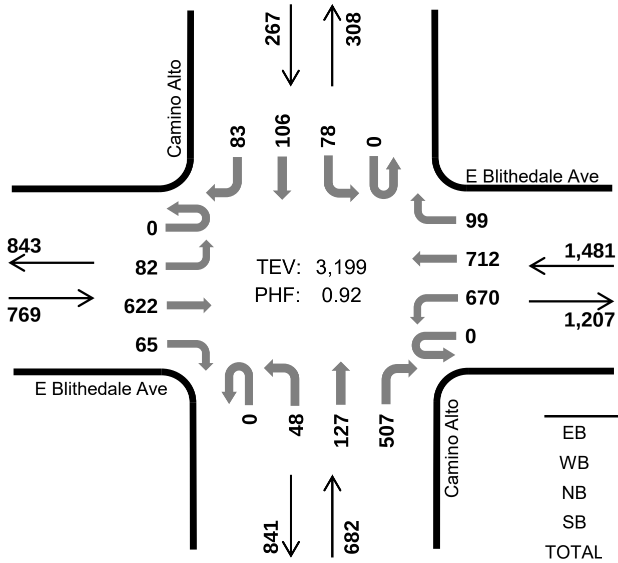
Interval Start	E Bilthedale Ave			E Bilthedale Ave			Roque Moraes Dr			Lomita Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	1	2	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	6
5:00 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
5:15 PM	1	0	1	0	0	0	0	2	1	0	0	0	5	10
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	2	1	2	0	0	0	0	2	1	0	4	1	13	0
Peak Hour	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

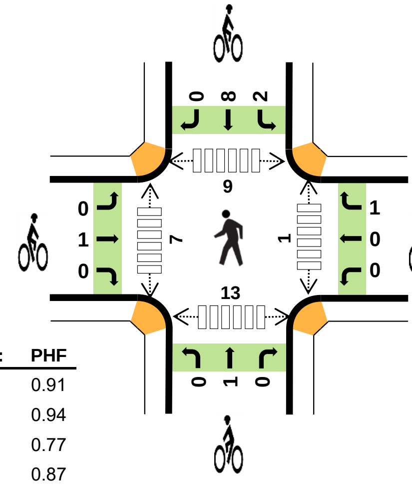
Camino Alto
E Blithedale Ave

Date: 03/10/2022
Count Period: 7:45 AM to 9:15 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	2.3%	0.91
WB	3.9%	0.94
NB	2.2%	0.77
SB	3.0%	0.87
TOTAL	3.1%	0.92



Count Summaries

Interval Start		E Blithedale Ave Eastbound				E Blithedale Ave Westbound				Camino Alto Northbound				Camino Alto Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	28	151	14	0	183	145	24	0	8	33	124	0	24	27	18	779	0
8:15 AM		0	19	166	27	0	203	169	21	0	14	28	148	0	16	31	23	865	0
8:30 AM		0	20	151	12	0	155	198	27	0	21	48	153	0	23	32	22	862	0
8:45 AM		0	15	154	12	0	129	200	27	0	5	18	82	0	15	16	20	693	3,199
Peak Hour	All	0	82	622	65	0	670	712	99	0	48	127	507	0	78	106	83	3,199	0
	HV	0	3	14	1	0	29	22	7	0	0	0	15	0	5	1	2	99	0
	HV%	-	4%	2%	2%	-	4%	3%	7%	-	0%	0%	3%	-	6%	1%	2%	3%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	3	16	2	1	*22*	0	0	1	1	*2*	0	2	2	1	*5*
8:15 AM	1	14	6	3	*24*	0	1	0	0	*1*	0	5	5	5	*15*
8:30 AM	7	12	5	2	*26*	0	0	0	0	*0*	0	0	1	6	*7*
8:45 AM	7	16	2	2	*27*	1	0	0	9	*10*	1	0	1	1	*3*
Peak Hour	18	58	15	8	*99*	1	1	1	10	*13*	1	7	9	13	*30*

Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Camino Alto Northbound UT	LT	TH	RT	Camino Alto Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:45 AM	0	18	138	9	0	165	174	22	0	5	15	98	0	17	19	12	692	0
8:00 AM	**0**	**28**	**151**	**14**	**0**	**183**	**145**	**24**	**0**	**8**	**33**	**124**	**0**	**24**	**27**	**18**	**779**	0
8:15 AM	**0**	**19**	**166**	**27**	**0**	**203**	**169**	**21**	**0**	**14**	**28**	**148**	**0**	**16**	**31**	**23**	**865**	0
8:30 AM	**0**	**20**	**151**	**12**	**0**	**155**	**198**	**27**	**0**	**21**	**48**	**153**	**0**	**23**	**32**	**22**	**862**	3,198
8:45 AM	**0**	**15**	**154**	**12**	**0**	**129**	**200**	**27**	**0**	**5**	**18**	**82**	**0**	**15**	**16**	**20**	**693**	**3,199**
9:00 AM	0	15	140	7	0	124	148	12	0	9	22	107	1	18	21	11	635	3,055
11:30 AM	0	18	163	15	0	137	162	20	0	9	20	119	0	16	15	16	710	2,900
11:45 AM	0	14	145	6	0	105	164	21	1	11	23	150	0	28	25	17	710	2,748
12:00 PM	0	14	157	15	0	139	132	20	0	4	11	131	0	24	10	11	668	2,723
12:15 PM	0	21	123	13	0	144	153	26	1	3	23	115	0	31	19	8	680	2,768
12:30 PM	0	15	163	12	0	112	154	21	0	12	21	114	0	18	13	16	671	2,729
12:45 PM	0	16	151	14	0	128	146	35	1	8	24	126	0	24	27	15	715	2,734
1:00 PM	0	27	152	8	1	119	136	12	0	13	26	144	0	22	12	12	684	2,750
1:15 PM	0	12	131	12	0	140	148	25	1	7	19	127	0	29	17	21	689	2,759
1:30 PM	0	16	112	6	0	135	149	31	0	4	19	107	0	23	22	14	638	2,726
1:45 PM	0	19	146	12	0	151	141	28	1	16	21	139	0	24	16	20	734	2,745
2:00 PM	0	13	164	12	0	119	146	18	0	5	31	142	0	30	16	16	712	2,773
2:15 PM	0	18	155	7	1	134	143	27	1	9	42	166	0	20	21	16	760	2,844
2:30 PM	0	34	191	11	0	138	154	29	0	6	23	114	0	32	9	19	760	2,966
2:45 PM	0	28	152	8	0	146	152	38	0	9	24	127	0	23	18	21	746	2,978
3:00 PM	0	37	192	11	0	154	144	32	0	6	43	166	0	27	23	15	850	3,116
3:15 PM	0	26	116	6	0	187	138	40	0	9	45	140	0	26	23	12	768	3,124
3:30 PM	0	31	128	8	0	160	159	23	0	10	50	131	0	34	35	26	795	3,159
3:45 PM	0	40	183	7	0	154	179	24	0	7	73	159	0	24	32	24	906	3,319
Count Total	0	115	900	81	0	959	1,034	133	0	62	164	712	1	113	146	106	4,526	0
Peak Hour All	**0**	**82**	**622**	**65**	**0**	**670**	**712**	**99**	**0**	**48**	**127**	**507**	**0**	**78**	**106**	**83**	**3,199**	**0**
Peak Hour HV	**0**	**3**	**14**	**1**	**0**	**29**	**22**	**7**	**0**	**0**	**0**	**15**	**0**	**5**	**1**	**2**	**99**	**0**
Peak Hour HV%	**-**	**4%**	**2%**	**2%**	**-**	**4%**	**3%**	**7%**	**-**	**0%**	**0%**	**3%**	**-**	**6%**	**1%**	**2%**	**3%**	**0**

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:45 AM	1	10	3	1	*15*	0	3	2	0	*5*	1	1	3	0	*5*
8:00 AM	**3**	**16**	**2**	**1**	***22***	**0**	**0**	**1**	**1**	***2***	**0**	**2**	**2**	**1**	*5*
8:15 AM	**1**	**14**	**6**	**3**	***24***	**0**	**1**	**0**	**0**	***1***	**0**	**5**	**5**	**5**	*15*
8:30 AM	**7**	**12**	**5**	**2**	***26***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**6**	*7*
8:45 AM	**7**	**16**	**2**	**2**	***27***	**1**	**0**	**0**	**9**	***10***	**1**	**0**	**1**	**1**	***3***
9:00 AM	6	6	5	1	*18*	0	1	0	3	*4*	0	0	1	3	*4*
11:30 AM	3	11	6	0	*20*	0	0	0	2	*2*	0	0	0	0	*0*
11:45 AM	6	9	7	3	*25*	1	0	2	0	*3*	2	1	1	1	*5*
12:00 PM	6	10	2	1	*19*	1	1	0	0	*2*	1	1	1	0	*3*
12:15 PM	4	9	5	3	*21*	0	0	1	3	*4*	1	2	2	1	*6*
12:30 PM	2	6	4	2	*14*	0	2	2	2	*6*	0	1	2	0	*3*
12:45 PM	4	12	4	1	*21*	0	1	0	0	*1*	1	1	1	0	*3*
1:00 PM	4	8	7	0	*19*	1	1	1	0	*3*	0	1	2	0	*3*
1:15 PM	4	9	4	6	*23*	0	1	3	0	*4*	0	1	3	1	*5*
1:30 PM	4	11	3	0	*18*	0	1	1	6	*8*	0	1	3	0	*4*
1:45 PM	4	5	6	0	*15*	0	1	0	3	*4*	1	1	2	0	*4*
2:00 PM	9	8	3	2	*22*	2	1	1	1	*5*	2	1	3	3	*9*
2:15 PM	5	9	7	0	*21*	0	2	1	1	*4*	1	0	0	2	*3*
2:30 PM	4	3	2	1	*10*	0	1	1	1	*3*	0	0	0	2	*2*
2:45 PM	4	6	7	2	*19*	0	3	2	2	*7*	0	0	0	0	*0*
3:00 PM	2	3	5	2	*12*	1	1	3	1	*6*	0	0	7	13	*20*
3:15 PM	2	2	2	2	*8*	1	0	2	2	*5*	0	3	2	3	*8*
3:30 PM	6	2	5	0	*13*	0	1	0	5	*6*	0	1	1	2	*4*
3:45 PM	5	4	4	2	*15*	0	0	1	3	*4*	2	0	3	3	*8*
Count Total	25	74	23	10	*132*	1	5	3	13	*22*	2	8	13	16	*39*
Peak Hour	**18**	**58**	**15**	**8**	***99***	**1**	**1**	**1**	**10**	***13***	**1**	**7**	**9**	**13**	***30***

Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Camino Alto				Camino Alto				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM	0	1	0	0	0	3	7	0	0	0	0	3	0	1	0	0	15	0
8:00 AM	**0**	**0**	**3**	**0**	**0**	**7**	**5**	**4**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**22**	0
8:15 AM	**0**	**0**	**1**	**0**	**0**	**7**	**6**	**1**	**0**	**0**	**0**	**6**	**0**	**1**	**1**	**1**	**24**	0
8:30 AM	**0**	**3**	**4**	**0**	**0**	**8**	**3**	**1**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**1**	**26**	87
8:45 AM	**0**	**0**	**6**	**1**	**0**	**7**	**8**	**1**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**27**	**99**
9:00 AM	0	0	6	0	0	2	4	0	0	1	0	4	0	1	0	0	18	95
11:30 AM	0	0	3	0	0	4	6	1	0	0	0	6	0	0	0	0	20	91
11:45 AM	0	1	5	0	0	5	3	1	0	0	0	7	0	3	0	0	25	90
12:00 PM	0	0	6	0	0	6	3	1	0	0	0	2	0	0	0	1	19	82
12:15 PM	0	1	3	0	0	3	6	0	0	0	0	5	0	1	2	0	21	85
12:30 PM	0	1	1	0	0	5	1	0	0	0	0	4	0	0	0	2	14	79
12:45 PM	0	0	4	0	0	4	2	6	0	0	0	4	0	1	0	0	21	75
1:00 PM	0	0	4	0	0	5	2	1	0	0	0	7	0	0	0	0	19	75
1:15 PM	0	0	3	1	0	5	4	0	0	0	0	4	0	3	0	3	23	77
1:30 PM	0	0	4	0	0	3	7	1	0	0	1	2	0	0	0	0	18	81
1:45 PM	0	0	4	0	0	2	2	1	0	0	1	5	0	0	0	0	15	75
2:00 PM	0	0	8	1	0	2	5	1	0	0	0	3	0	2	0	0	22	78
2:15 PM	0	0	5	0	0	5	4	0	0	0	0	7	0	0	0	0	21	76
2:30 PM	0	1	3	0	0	0	3	0	0	0	0	2	0	0	0	1	10	68
2:45 PM	0	0	4	0	0	1	4	1	0	0	0	7	0	0	0	2	19	72
3:00 PM	0	0	2	0	0	2	1	0	0	0	1	4	0	2	0	0	12	62
3:15 PM	0	1	1	0	0	1	1	0	0	0	0	2	0	2	0	0	8	49
3:30 PM	0	0	6	0	0	2	0	0	0	0	1	4	0	0	0	0	13	52
3:45 PM	0	1	4	0	0	3	1	0	0	0	0	4	0	2	0	0	15	48
Count Total	0	4	20	1	0	34	33	7	0	1	0	22	0	7	1	2	132	0
Peak Hour	**0**	**3**	**14**	**1**	**0**	**29**	**22**	**7**	**0**	**0**	**0**	**15**	**0**	**5**	**1**	**2**	**99**	**0**

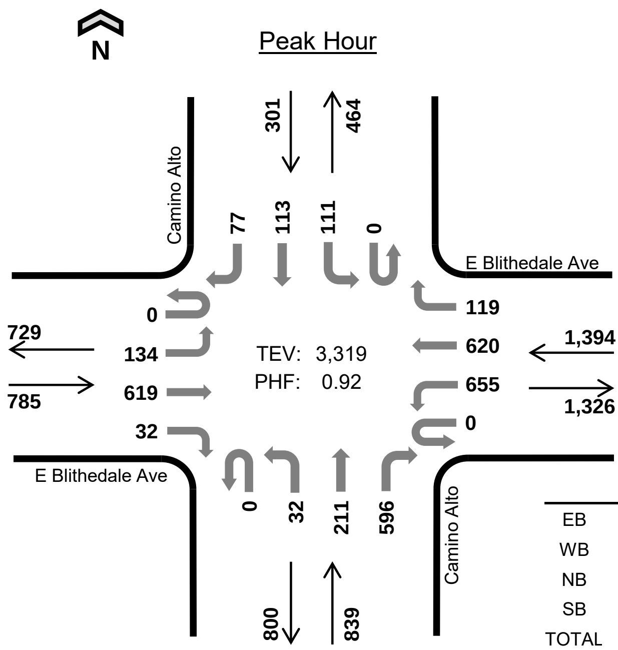
Count Summaries - Bikes

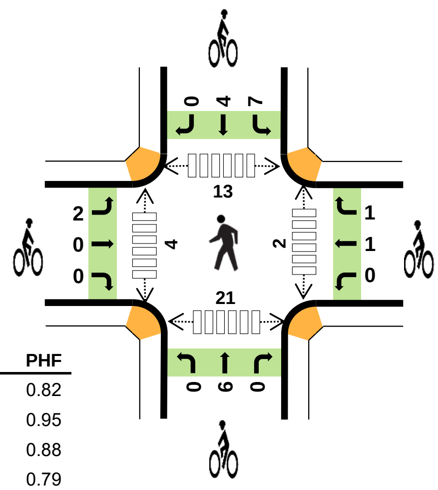
Interval Start	E Blithedale Ave			E Blithedale Ave			Camino Alto			Camino Alto			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:45 AM	0	0	0	0	0	3	0	1	1	0	0	0	5	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
8:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	**0**	**10**	**13**
9:00 AM	0	0	0	0	1	0	0	0	0	2	1	0	4	15
11:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	2	16
11:45 AM	1	0	0	0	0	0	0	2	0	0	0	0	3	19
12:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	2	11
12:15 PM	0	0	0	0	0	0	0	1	0	3	0	0	4	11
12:30 PM	0	0	0	0	1	1	0	2	0	1	1	0	6	15
12:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	13
1:00 PM	0	1	0	0	0	1	0	1	0	0	0	0	3	14
1:15 PM	0	0	0	1	0	0	0	2	1	0	0	0	4	14
1:30 PM	0	0	0	0	0	1	0	1	0	2	3	1	8	16
1:45 PM	0	0	0	0	0	1	0	0	0	2	0	1	4	19
2:00 PM	1	1	0	0	1	0	0	1	0	1	0	0	5	21
2:15 PM	0	0	0	0	0	2	0	1	0	0	1	0	4	21
2:30 PM	0	0	0	0	0	1	0	0	1	0	1	0	3	16
2:45 PM	0	0	0	0	1	2	0	2	0	1	1	0	7	19
3:00 PM	1	0	0	0	0	1	0	3	0	1	0	0	6	20
3:15 PM	1	0	0	0	0	0	0	2	0	0	2	0	5	21
3:30 PM	0	0	0	0	1	0	0	0	0	3	2	0	6	24
3:45 PM	0	0	0	0	0	0	0	1	0	3	0	0	4	21
Count Total	0	1	0	0	1	4	0	2	1	4	9	0	22	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**8**	**0**	**13**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Camino Alto
E Blithedale Ave

Date: 03/10/2022
Count Period: 2:00 PM to 4:00 PM
Peak Hour: 3:00 PM to 4:00 PM





	HV %:	PHF
EB	1.9%	0.82
WB	0.8%	0.95
NB	1.9%	0.88
SB	2.0%	0.79
TOTAL	1.4%	0.92

Two-Hour Count Summaries

Interval Start		E Blithedale Ave Eastbound				E Blithedale Ave Westbound				Camino Alto Northbound				Camino Alto Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM		0	13	164	12	0	119	146	18	0	5	31	142	0	30	16	16	712	0
2:15 PM		0	18	155	7	1	134	143	27	1	9	42	166	0	20	21	16	760	0
2:30 PM		0	34	191	11	0	138	154	29	0	6	23	114	0	32	9	19	760	0
2:45 PM		0	28	152	8	0	146	152	38	0	9	24	127	0	23	18	21	746	2,978
3:00 PM		**0**	**37**	**192**	**11**	**0**	**154**	**144**	**32**	**0**	**6**	**43**	**166**	**0**	**27**	**23**	**15**	**850**	3,116
3:15 PM		**0**	**26**	**116**	**6**	**0**	**187**	**138**	**40**	**0**	**9**	**45**	**140**	**0**	**26**	**23**	**12**	**768**	3,124
3:30 PM		**0**	**31**	**128**	**8**	**0**	**160**	**159**	**23**	**0**	**10**	**50**	**131**	**0**	**34**	**35**	**26**	**795**	3,159
3:45 PM		**0**	**40**	**183**	**7**	**0**	**154**	**179**	**24**	**0**	**7**	**73**	**159**	**0**	**24**	**32**	**24**	**906**	**3,319**
Count Total		0	227	1,281	70	1	1,192	1,215	231	1	61	331	1,145	0	216	177	149	6,297	0
Peak Hour	**All**	**0**	**134**	**619**	**32**	**0**	**655**	**620**	**119**	**0**	**32**	**211**	**596**	**0**	**111**	**113**	**77**	**3,319**	**0**
	HV	**0**	**2**	**13**	**0**	**0**	**8**	**3**	**0**	**0**	**0**	**2**	**14**	**0**	**6**	**0**	**0**	**48**	**0**
	HV%	**-**	**1%**	**2%**	**0%**	**-**	**1%**	**0%**	**0%**	**-**	**0%**	**1%**	**2%**	**-**	**5%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
2:00 PM	9	8	3	2	*22*	2	1	1	1	*5*	2	1	3	3	*9*
2:15 PM	5	9	7	0	*21*	0	2	1	1	*4*	1	0	0	2	*3*
2:30 PM	4	3	2	1	*10*	0	1	1	1	*3*	0	0	0	2	*2*
2:45 PM	4	6	7	2	*19*	0	3	2	2	*7*	0	0	0	0	*0*
3:00 PM	**2**	**3**	**5**	**2**	***12***	**1**	**1**	**3**	**1**	***6***	**0**	**0**	**7**	**13**	***20***
3:15 PM	**2**	**2**	**2**	**2**	***8***	**1**	**0**	**2**	**2**	***5***	**0**	**3**	**2**	**3**	***8***
3:30 PM	**6**	**2**	**5**	**0**	***13***	**0**	**1**	**0**	**5**	***6***	**0**	**1**	**1**	**2**	***4***
3:45 PM	**5**	**4**	**4**	**2**	***15***	**0**	**0**	**1**	**3**	***4***	**2**	**0**	**3**	**3**	***8***
Count Total	37	37	35	11	*120*	4	9	11	16	*40*	5	5	16	28	*54*
Peak Hour	**15**	**11**	**16**	**6**	***48***	**2**	**2**	**6**	**11**	***21***	**2**	**4**	**13**	**21**	***40***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave				E Blithedale Ave				Camino Alto				Camino Alto				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	8	1	0	2	5	1	0	0	0	3	0	2	0	0	22	0
2:15 PM	0	0	5	0	0	5	4	0	0	0	0	7	0	0	0	0	21	0
2:30 PM	0	1	3	0	0	0	3	0	0	0	0	2	0	0	0	1	10	0
2:45 PM	0	0	4	0	0	1	4	1	0	0	0	7	0	0	0	2	19	72
3:00 PM	**0**	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**4**	**0**	**2**	**0**	**0**	**12**	62
3:15 PM	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**8**	49
3:30 PM	**0**	**0**	**6**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**0**	**13**	52
3:45 PM	**0**	**1**	**4**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**0**	**0**	**15**	**48**
Count Total	0	3	33	1	0	16	19	2	0	0	2	33	0	8	0	3	120	0
Peak Hour	**0**	**2**	**13**	**0**	**0**	**8**	**3**	**0**	**0**	**0**	**2**	**14**	**0**	**6**	**0**	**0**	**48**	**0**

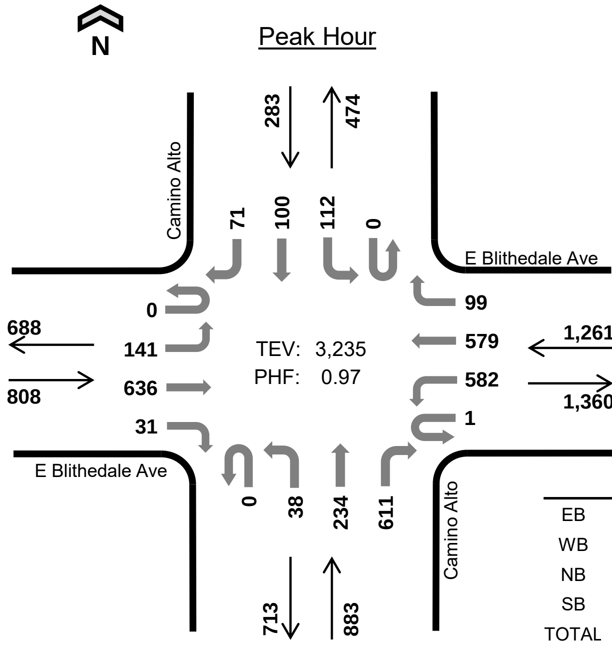
Two-Hour Count Summaries - Bikes

Interval Start	E Blithedale Ave			E Blithedale Ave			Camino Alto			Camino Alto			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	1	1	0	0	1	0	0	1	0	1	0	0	5	0
2:15 PM	0	0	0	0	0	2	0	1	0	0	1	0	4	0
2:30 PM	0	0	0	0	0	1	0	0	1	0	1	0	3	0
2:45 PM	0	0	0	0	1	2	0	2	0	1	1	0	7	19
3:00 PM	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**1**	**0**	**0**	**6**	20
3:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**5**	21
3:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**2**	**0**	**6**	24
3:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**4**	**21**
Count Total	3	1	0	0	3	6	0	10	1	9	7	0	40	0
Peak Hour	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**6**	**0**	**7**	**4**	**0**	**21**	**0**

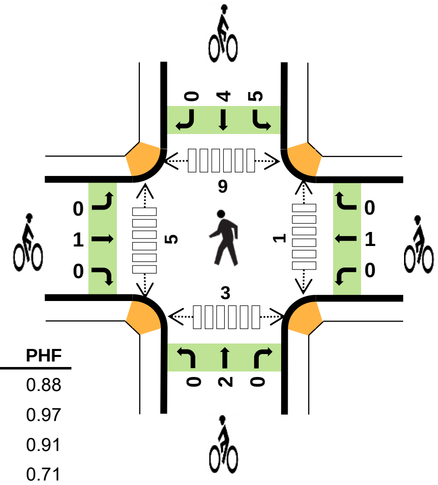
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Camino Alto
E Blithedale Ave

Date: 03/10/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	1.1%	0.88
WB	1.3%	0.97
NB	1.4%	0.91
SB	0.7%	0.71
TOTAL	1.2%	0.97



Two-Hour Count Summaries

Interval Start		E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Camino Alto Northbound UT	LT	TH	RT	Camino Alto Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	17	149	8	0	158	138	30	0	9	70	164	0	30	27	8	808	0
4:15 PM		0	39	174	6	0	120	178	24	0	14	58	146	0	19	18	16	812	0
4:30 PM		0	35	145	5	1	168	120	32	0	9	52	149	0	26	21	18	781	0
4:45 PM		0	50	168	12	0	136	143	13	0	6	54	152	0	37	34	29	834	3,235
5:00 PM		0	46	150	11	0	135	141	45	0	9	65	145	0	30	15	14	806	3,233
5:15 PM		0	34	127	7	0	118	152	38	0	9	71	148	0	34	33	11	782	3,203
5:30 PM		0	37	163	9	0	146	147	37	0	10	51	135	0	30	19	13	797	3,219
5:45 PM		0	25	119	14	0	120	145	33	0	14	65	127	0	21	34	10	727	3,112
Count Total		0	283	1,195	72	1	1,101	1,164	252	0	80	486	1,166	0	227	201	119	6,347	0
Peak Hour	All	0	141	636	31	1	582	579	99	0	38	234	611	0	112	100	71	3,235	0
	HV	0	0	9	0	0	6	9	1	0	1	1	10	0	2	0	0	39	0
	HV%	-	0%	1%	0%	0%	1%	2%	1%	-	3%	0%	2%	-	2%	0%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	2	5	0	*8*	0	0	0	6	*6*	0	2	1	3	*6*
4:15 PM	3	7	2	0	*12*	0	1	0	0	*1*	0	1	2	0	*3*
4:30 PM	3	2	4	2	*11*	1	0	2	2	*5*	1	1	4	0	*6*
4:45 PM	2	5	1	0	*8*	0	0	0	1	*1*	0	1	2	0	*3*
5:00 PM	2	0	3	0	*5*	2	0	2	4	*8*	3	0	0	5	*8*
5:15 PM	1	3	3	0	*7*	0	0	1	1	*2*	0	0	3	3	*6*
5:30 PM	2	0	2	0	*4*	1	1	0	3	*5*	0	0	4	2	*6*
5:45 PM	0	2	1	0	*3*	0	0	1	4	*5*	0	0	1	0	*1*
Count Total	14	21	21	2	*58*	4	2	6	21	*33*	4	5	17	13	*39*
Peak Hour	9	16	12	2	*39*	1	1	2	9	*13*	1	5	9	3	*18*

Two-Hour Count Summaries - Heavy Vehicles

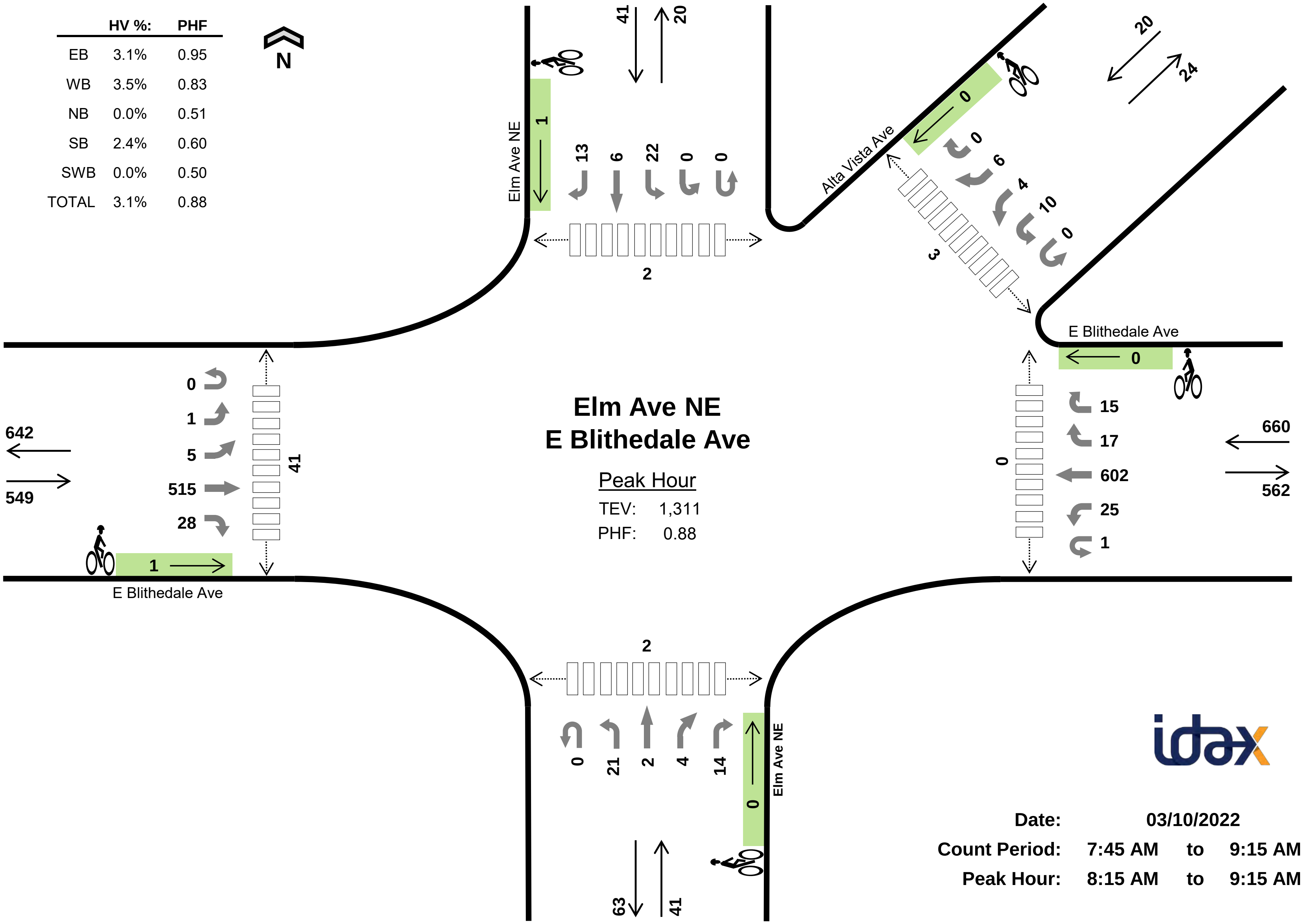
Interval Start	E Blithedale Ave Eastbound UT	LT	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	Camino Alto Northbound UT	LT	TH	RT	Camino Alto Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**8**	0
4:15 PM	**0**	**0**	**3**	**0**	**0**	**2**	**5**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**12**	0
4:30 PM	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**3**	**0**	**2**	**0**	**0**	**11**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	**39**
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	5	36
5:15 PM	0	0	1	0	0	1	1	1	0	0	1	2	0	0	0	0	7	31
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	4	24
5:45 PM	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	3	19
Count Total	0	0	14	0	0	7	11	3	0	1	2	18	0	2	0	0	58	0
Peak Hour	**0**	**0**	**9**	**0**	**0**	**6**	**9**	**1**	**0**	**1**	**1**	**10**	**0**	**2**	**0**	**0**	**39**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	E Blithedale Ave Eastbound LT	TH	RT	E Blithedale Ave Westbound LT	TH	RT	Camino Alto Northbound LT	TH	RT	Camino Alto Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**2**	**0**	**6**	0
4:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**0**	**5**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**13**
5:00 PM	1	1	0	0	0	0	0	2	0	2	2	0	8	15
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	16
5:30 PM	1	0	0	0	0	1	0	0	0	0	2	1	5	16
5:45 PM	0	0	0	0	0	0	0	1	0	0	4	0	5	20
Count Total	2	2	0	0	1	1	0	6	0	7	13	1	33	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**5**	**4**	**0**	**13**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

	HV %:	PHF
EB	3.1%	0.95
WB	3.5%	0.83
NB	0.0%	0.51
SB	2.4%	0.60
SWB	0.0%	0.50
TOTAL	3.1%	0.88



Elm Ave NE
E Blithedale Ave

Peak Hour

TEV: 1,311

PHF: 0.88

Date:	03/10/2022			
Count Period:	7:45 AM	to	9:15 AM	
Peak Hour:	8:15 AM	to	9:15 AM	

Count Summaries

Interval Start	E Blithedale Ave Eastbound					E Blithedale Ave Westbound					Elm Ave NE Northbound					Elm Ave NE Southbound					Alta Vista Ave Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:45 AM	0	0	0	111	0	0	8	127	3	2	0	1	0	2	1	0	0	2	3	1	0	2	2	0	0	265	0
8:00 AM	0	0	0	125	8	0	5	113	2	2	0	0	0	1	3	0	0	4	4	3	0	4	1	0	0	275	0
8:15 AM	**0**	**0**	**1**	**126**	**16**	**0**	**15**	**112**	**1**	**3**	**0**	**8**	**2**	**1**	**9**	**0**	**0**	**9**	**2**	**6**	**0**	**3**	**4**	**3**	**0**	**321**	0
8:30 AM	**0**	**0**	**0**	**136**	**9**	**0**	**4**	**181**	**7**	**6**	**0**	**6**	**0**	**3**	**4**	**0**	**0**	**5**	**2**	**3**	**0**	**3**	**0**	**2**	**0**	**371**	1,232
8:45 AM	**0**	**0**	**1**	**132**	**2**	**1**	**4**	**181**	**7**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**2**	**0**	**2**	**0**	**1**	**0**	**342**	1,309
9:00 AM	**0**	**1**	**3**	**121**	**1**	**0**	**2**	**128**	**2**	**4**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**5**	**1**	**2**	**0**	**2**	**0**	**0**	**0**	**277**	**1,311**
11:30 AM	0	0	0	133	2	0	0	146	2	2	0	3	1	0	3	0	0	7	1	2	0	1	1	1	0	305	1,295
11:45 AM	0	0	2	131	0	0	3	146	2	5	0	1	2	0	2	0	0	6	3	2	0	1	0	1	0	307	1,231
12:00 PM	0	0	2	135	3	0	2	113	3	1	0	3	0	0	3	0	0	2	2	2	0	2	0	2	0	275	1,164
12:15 PM	0	0	1	120	4	0	3	121	4	3	0	0	1	1	5	0	0	9	0	2	0	4	0	3	0	281	1,168
12:30 PM	0	2	2	134	2	0	4	134	6	2	0	3	0	0	1	0	0	6	0	1	0	2	0	1	0	300	1,163
12:45 PM	0	0	1	149	0	0	1	141	2	2	0	4	1	0	2	0	0	4	0	3	0	1	0	1	0	312	1,168
1:00 PM	0	0	2	129	3	0	0	115	2	0	0	3	1	0	0	0	0	11	0	1	0	6	0	0	0	273	1,166
1:15 PM	0	1	1	115	1	0	1	132	3	1	0	5	0	0	4	0	0	5	1	1	0	0	0	0	0	271	1,156
1:30 PM	0	0	1	106	2	0	4	118	3	2	0	1	1	0	0	0	0	3	3	4	0	6	0	1	0	255	1,111
1:45 PM	0	0	1	128	2	0	1	134	6	4	0	0	1	0	2	0	0	5	0	2	0	3	0	2	0	291	1,090
2:00 PM	0	0	0	151	4	1	2	106	3	4	0	2	0	0	3	0	0	5	4	1	0	2	0	0	0	288	1,105
2:15 PM	0	1	1	120	6	1	6	112	9	1	0	2	2	0	2	0	0	4	1	1	0	1	0	2	0	272	1,106
2:30 PM	0	1	1	156	3	0	11	120	3	3	0	2	1	1	4	0	0	6	0	1	0	4	1	0	0	318	1,169
2:45 PM	0	0	2	157	10	0	8	117	1	4	0	2	1	0	6	0	0	13	3	3	0	3	0	1	0	331	1,209
3:00 PM	0	1	2	148	2	0	5	126	5	0	0	5	0	0	9	0	0	7	0	1	0	1	2	1	0	315	1,236
3:15 PM	0	0	1	125	10	0	0	122	1	4	0	4	1	2	6	0	0	4	5	3	0	0	2	0	0	290	1,254
3:30 PM	0	1	0	102	5	0	2	131	4	5	0	5	1	1	2	0	0	5	6	3	0	2	3	1	0	279	1,215
3:45 PM	0	0	1	107	8	0	1	154	2	2	0	5	6	2	3	0	1	6	7	5	0	0	2	1	0	313	1,197
Count Total	0	1	5	751	36	1	38	842	22	19	0	22	2	7	18	0	0	28	13	17	0	16	7	6	0	1,851	0
Peak Hour All	**0**	**1**	**5**	**515**	**28**	**1**	**25**	**602**	**17**	**15**	**0**	**21**	**2**	**4**	**14**	**0**	**0**	**22**	**6**	**13**	**0**	**10**	**4**	**6**	**0**	**1,311**	**0**
Peak Hour HV	**0**	**0**	**0**	**17**	**0**	**0**	**2**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**41**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**3%**	**0%**	**0%**	**8%**	**3%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**-**	**0%**	**0%**	**8%**	**-**	**0%**	**0%**	**0%**	**-**	**3%**	**0**

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

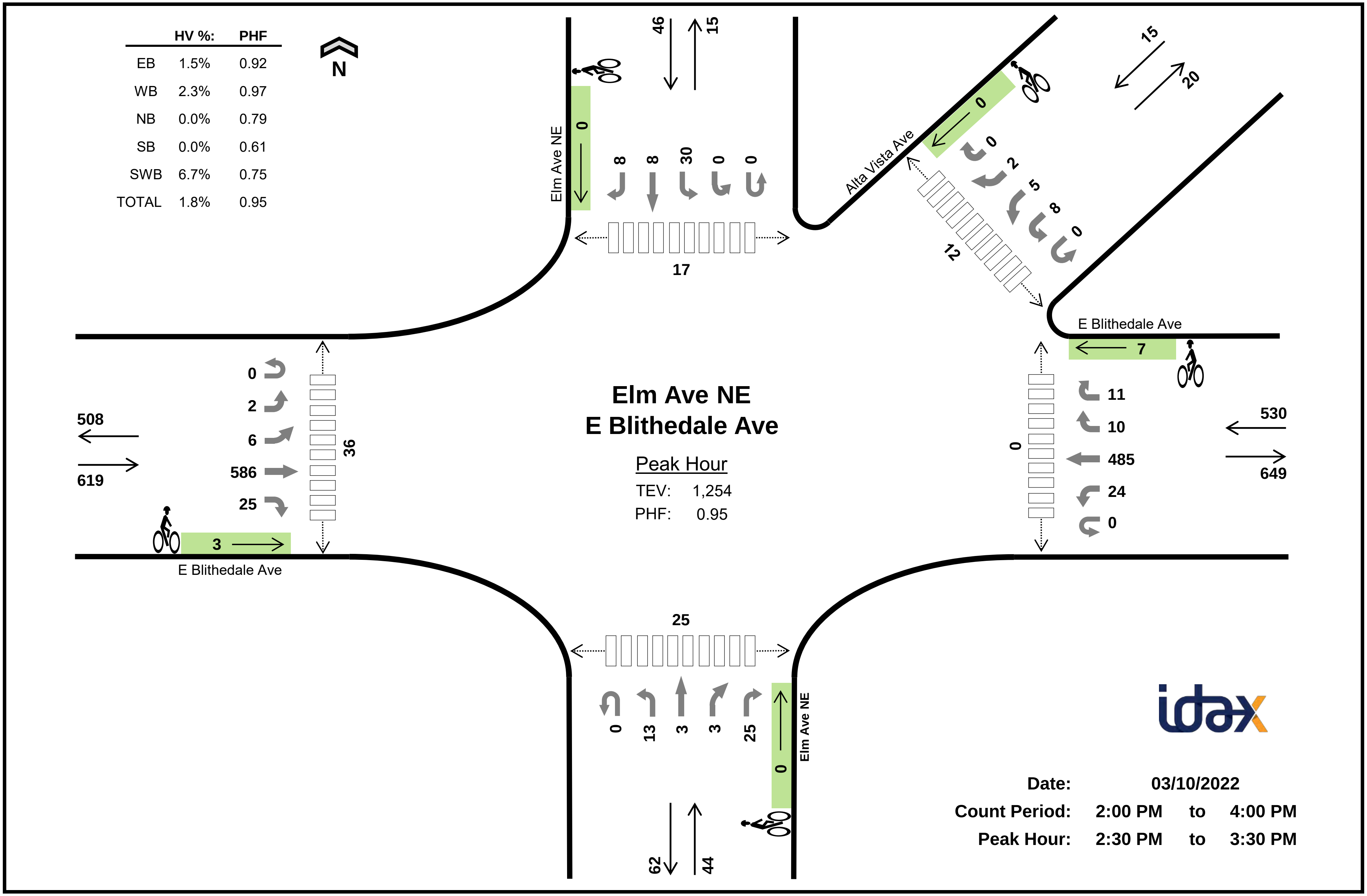
Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	SWB	Total	Bicycles EB	WB	NB	SB	SWB	Total	Pedestrians (Crossing Leg) East	West	North	South	Northeast	Total
7:45 AM	1	7	0	0	0	*8*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
8:00 AM	2	8	0	0	0	*10*	0	0	0	0	0	*0*	0	7	3	0	0	*10*
8:15 AM	**2**	**6**	**0**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**27**	**0**	**0**	**1**	***28***
8:30 AM	**7**	**4**	**0**	**0**	**0**	***11***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**6**	**0**	**0**	**1**	***7***
8:45 AM	**5**	**9**	**0**	**0**	**0**	***14***	**1**	**0**	**0**	**1**	**0**	***2***	**0**	**6**	**0**	**0**	**1**	***7***
9:00 AM	**3**	**4**	**0**	**1**	**0**	***8***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**2**	**0**	***6***
11:30 AM	0	6	0	0	0	*6*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
11:45 AM	3	4	0	0	1	*8*	0	0	0	0	0	*0*	0	0	3	0	4	*7*
12:00 PM	7	2	0	0	0	*9*	0	0	0	0	0	*0*	0	3	4	0	1	*8*
12:15 PM	5	3	1	0	0	*9*	0	0	0	0	0	*0*	0	0	0	2	0	*2*
12:30 PM	2	2	0	0	0	*4*	0	1	0	0	0	*1*	0	1	1	0	1	*3*
12:45 PM	4	4	0	0	0	*8*	1	0	0	0	0	*1*	0	0	0	0	0	*0*
1:00 PM	4	2	0	0	0	*6*	0	0	0	0	0	*0*	0	1	0	0	0	*1*
1:15 PM	2	4	1	0	0	*7*	0	0	0	0	0	*0*	0	1	0	3	0	*4*
1:30 PM	3	5	0	0	0	*8*	0	0	0	0	0	*0*	0	1	0	0	2	*3*
1:45 PM	2	3	0	0	0	*5*	0	1	0	0	0	*1*	0	2	2	0	2	*6*
2:00 PM	9	5	0	0	0	*14*	0	1	0	0	0	*1*	0	1	2	2	1	*6*
2:15 PM	2	4	0	0	0	*6*	0	0	0	1	0	*1*	0	1	0	0	0	*1*
2:30 PM	0	2	0	0	0	*2*	1	0	0	0	0	*1*	0	0	1	3	1	*5*
2:45 PM	6	8	0	0	1	*15*	0	0	0	0	0	*0*	0	26	11	0	6	*43*
3:00 PM	1	1	0	0	0	*2*	1	1	0	0	0	*2*	0	3	3	20	1	*27*
3:15 PM	2	1	0	0	0	*3*	1	6	0	0	0	*7*	0	7	2	2	4	*15*
3:30 PM	5	0	0	0	1	*6*	0	2	0	0	0	*2*	0	2	1	2	0	*5*
3:45 PM	3	1	0	0	0	*4*	0	0	0	0	0	*0*	0	6	0	2	2	*10*
Count Total	20	38	0	1	0	*59*	1	0	0	1	0	*2*	0	48	5	2	3	*58*
Peak Hr	**17**	**23**	**0**	**1**	**0**	***41***	**1**	**0**	**0**	**1**	**0**	***2***	**0**	**41**	**2**	**2**	**3**	*48*

Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave Eastbound UT	LT	BL	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	HR	Elm Ave NE Northbound UT	LT	TH	BR	RT	Elm Ave NE Southbound UT	HL	LT	TH	RT	Alta Vista Ave Southwestbound UT	HL	BL	BR	HR	15-min Total	Rolling One Hour
7:45 AM	0	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
8:00 AM	0	0	0	2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
8:15 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	0
8:30 AM	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	37
8:45 AM	**0**	**0**	**0**	**5**	**0**	**0**	**1**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	43
9:00 AM	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	**41**
11:30 AM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	39
11:45 AM	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	8	36
12:00 PM	0	0	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	31
12:15 PM	0	0	0	5	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9	32
12:30 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	30
12:45 PM	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	30
1:00 PM	0	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	27
1:15 PM	0	0	0	2	0	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	25
1:30 PM	0	0	0	3	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	29
1:45 PM	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	26
2:00 PM	0	0	0	9	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	34
2:15 PM	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	33
2:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	27
2:45 PM	0	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	15	37
3:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	25
3:15 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	22
3:30 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	26
3:45 PM	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	15
Count Total	0	0	0	20	0	0	2	36	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	59	0
Peak Hour	**0**	**0**	**0**	**17**	**0**	**0**	**2**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	41	**0**

Count Summaries - Bikes

Interval Start	E Blithedale Ave Eastbound UT	LT	BL	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	HR	Elm Ave NE Northbound UT	LT	TH	BR	RT	Elm Ave NE Southbound UT	HL	LT	TH	RT	Alta Vista Ave Southwestbound UT	HL	BL	BR	HR	15-min Total	Rolling One Hour
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	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**	**0**	**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**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
9:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
2:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3
2:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
3:15 PM	0	0	0	1	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	10
3:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Count Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2	**0**


HV %: PHF
EB 1.5% 0.92
WB 2.3% 0.97
NB 0.0% 0.79
SB 0.0% 0.61
SWB 6.7% 0.75
TOTAL 1.8% 0.95
N
Elm Ave NE
E Blithedale Ave
Alta Vista Ave
Elm Ave NE
E Blithedale Ave
Peak Hour
TEV: 1,254
PHF: 0.95
46
15
8
8
30
0
0
17
15
20
0
0
2
5
8
0
12
7
11
10
485
24
0
0
530
649
508
619
0
2
6
586
25
36
3
25
0
13
3
3
25
0
62
44
Date: 03/10/2022
Count Period: 2:00 PM to 4:00 PM
Peak Hour: 2:30 PM to 3:30 PM

Two-Hour Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	BL	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	HR	Elm Ave NE Northbound UT	LT	TH	BR	RT	Elm Ave NE Southbound UT	HL	LT	TH	RT	Alta Vista Ave Southwestbound UT	HL	BL	BR	HR	15-min Total	Rolling One Hour
2:00 PM	0	0	0	151	4	1	2	106	3	4	0	2	0	0	3	0	0	5	4	1	0	2	0	0	0	288	0
2:15 PM	0	1	1	120	6	1	6	112	9	1	0	2	2	0	2	0	0	4	1	1	0	1	0	2	0	272	0
2:30 PM	**0**	**1**	**1**	**156**	**3**	**0**	**11**	**120**	**3**	**3**	**0**	**2**	**1**	**1**	**4**	**0**	**0**	**6**	**0**	**1**	**0**	**4**	**1**	**0**	**0**	**318**	0
2:45 PM	**0**	**0**	**2**	**157**	**10**	**0**	**8**	**117**	**1**	**4**	**0**	**2**	**1**	**0**	**6**	**0**	**0**	**13**	**3**	**3**	**0**	**3**	**0**	**1**	**0**	**331**	1,209
3:00 PM	**0**	**1**	**2**	**148**	**2**	**0**	**5**	**126**	**5**	**0**	**0**	**5**	**0**	**0**	**9**	**0**	**0**	**7**	**0**	**1**	**0**	**1**	**2**	**1**	**0**	**315**	1,236
3:15 PM	**0**	**0**	**1**	**125**	**10**	**0**	**0**	**122**	**1**	**4**	**0**	**4**	**1**	**2**	**6**	**0**	**0**	**4**	**5**	**3**	**0**	**0**	**2**	**0**	**0**	**290**	**1,254**
3:30 PM	0	1	0	102	5	0	2	131	4	5	0	5	1	1	2	0	0	5	6	3	0	2	3	1	0	279	1,215
3:45 PM	0	0	1	107	8	0	1	154	2	2	0	5	6	2	3	0	1	6	7	5	0	0	2	1	0	313	1,197
Count Total	0	4	8	1,066	48	2	35	988	28	23	0	27	12	6	35	0	1	50	26	18	0	13	10	6	0	2,406	0
Peak Hour All	**0**	**2**	**6**	**586**	**25**	**0**	**24**	**485**	**10**	**11**	**0**	**13**	**3**	**3**	**25**	**0**	**0**	**30**	**8**	**8**	**0**	**8**	**5**	**2**	**0**	**1,254**	**0**
Peak Hour HV	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**11**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**22**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**2%**	**0%**	**-**	**0%**	**2%**	**0%**	**9%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**50%**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

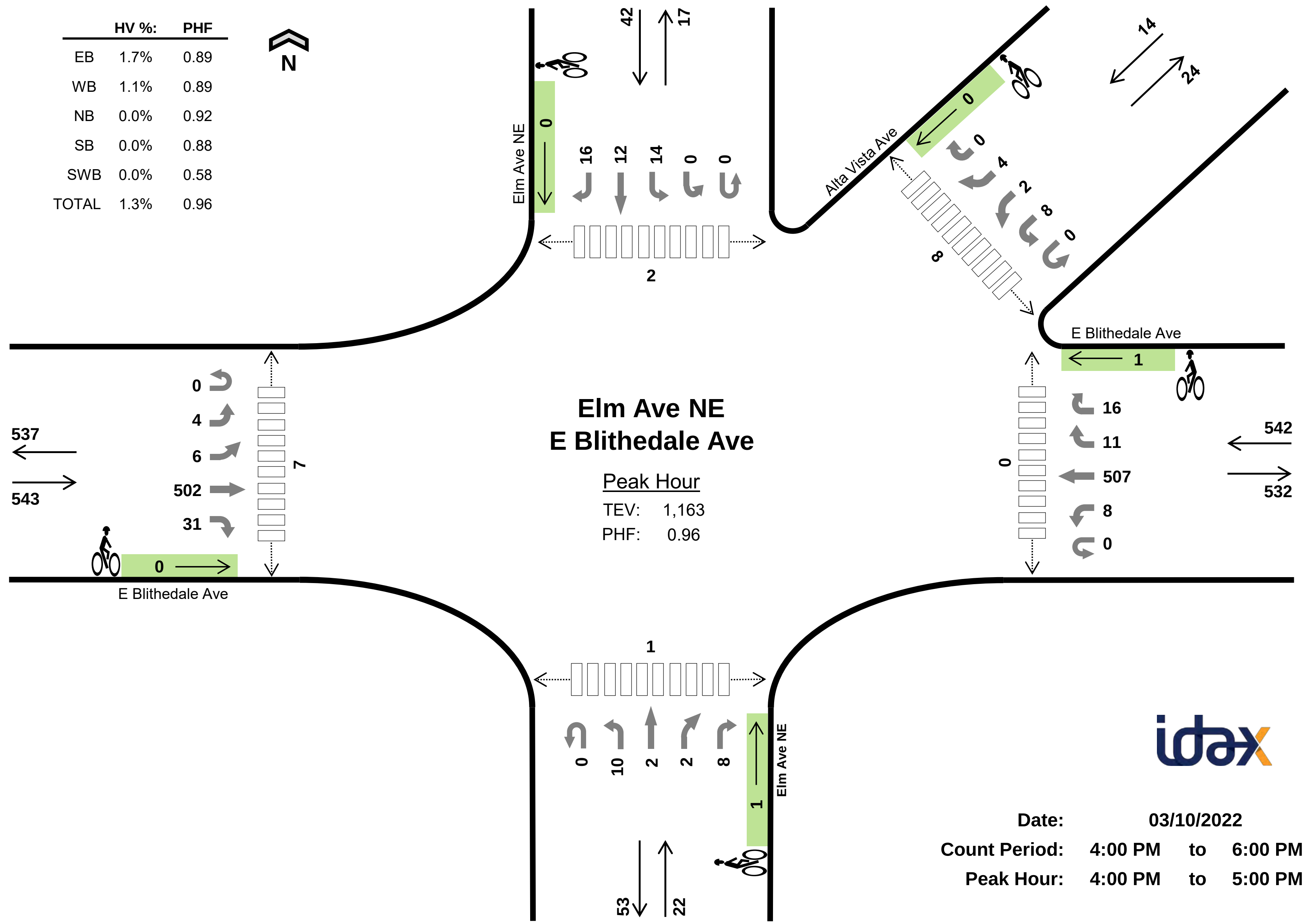
Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	SWB	Total	Bicycles EB	WB	NB	SB	SWB	Total	Pedestrians (Crossing Leg) East	West	North	South	Northeast	Total
2:00 PM	9	5	0	0	0	*14*	0	1	0	0	0	*1*	0	1	2	2	1	*6*
2:15 PM	2	4	0	0	0	*6*	0	0	0	1	0	*1*	0	1	0	0	0	*1*
2:30 PM	**0**	**2**	**0**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**3**	**1**	***5***
2:45 PM	**6**	**8**	**0**	**0**	**1**	***15***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**26**	**11**	**0**	**6**	***43***
3:00 PM	**1**	**1**	**0**	**0**	**0**	***2***	**1**	**1**	**0**	**0**	**0**	***2***	**0**	**3**	**3**	**20**	**1**	***27***
3:15 PM	**2**	**1**	**0**	**0**	**0**	***3***	**1**	**6**	**0**	**0**	**0**	***7***	**0**	**7**	**2**	**2**	**4**	***15***
3:30 PM	5	0	0	0	1	*6*	0	2	0	0	0	*2*	0	2	1	2	0	*5*
3:45 PM	3	1	0	0	0	*4*	0	0	0	0	0	*0*	0	6	0	2	2	*10*
Count Total	28	22	0	0	2	*52*	3	10	0	1	0	*14*	0	46	20	31	15	*112*
Peak Hr	**9**	**12**	**0**	**0**	**1**	***22***	**3**	**7**	**0**	**0**	**0**	***10***	**0**	**36**	**17**	**25**	**12**	*90*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave Eastbound					E Blithedale Ave Westbound					Elm Ave NE Northbound					Elm Ave NE Southbound					Alta Vista Ave Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
2:00 PM	0	0	0	9	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
2:15 PM	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
2:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
2:45 PM	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**15**	37
3:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	25
3:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**22**
3:30 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	26
3:45 PM	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	15
Count Total	0	0	0	28	0	1	0	20	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	52	0
Peak Hour	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**11**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	22	**0**

Two-Hour Count Summaries - Bikes

Interval Start	E Blithedale Ave Eastbound					E Blithedale Ave Westbound					Elm Ave NE Northbound					Elm Ave NE Southbound					Alta Vista Ave Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
2:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
2:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
2:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
3:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	4
3:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**10**
3:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Count Total	0	0	0	3	0	0	0	8	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	14	0
Peak Hour	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	10	**0**



	HV %:	PHF
EB	1.7%	0.89
WB	1.1%	0.89
NB	0.0%	0.92
SB	0.0%	0.88
SWB	0.0%	0.58
TOTAL	1.3%	0.96

idax

Date: 03/10/2022

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:00 PM to 5:00 PM

Project Manager: (415) 310-6469

project.manager.ca@idaxdata.com

Two-Hour Count Summaries

Interval Start	E Blithedale Ave Eastbound UT	LT	BL	TH	RT	E Blithedale Ave Westbound UT	LT	TH	RT	HR	Elm Ave NE Northbound UT	LT	TH	BR	RT	Elm Ave NE Southbound UT	HL	LT	TH	RT	Alta Vista Ave Southwestbound UT	HL	BL	BR	HR	15-min Total	Rolling One Hour
4:00 PM	**0**	**0**	**1**	**151**	**0**	**0**	**0**	**117**	**6**	**6**	**0**	**1**	**0**	**2**	**3**	**0**	**0**	**2**	**3**	**4**	**0**	**1**	**0**	**1**	**0**	**298**	0
4:15 PM	**0**	**1**	**3**	**116**	**13**	**0**	**0**	**147**	**3**	**3**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**3**	**5**	**2**	**0**	**1**	**0**	**0**	**0**	**302**	0
4:30 PM	**0**	**1**	**0**	**109**	**11**	**0**	**4**	**118**	**1**	**4**	**0**	**2**	**2**	**0**	**2**	**0**	**0**	**5**	**2**	**4**	**0**	**3**	**0**	**2**	**0**	**270**	0
4:45 PM	**0**	**2**	**2**	**126**	**7**	**0**	**4**	**125**	**1**	**3**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**4**	**2**	**6**	**0**	**3**	**2**	**1**	**0**	**293**	**1,163**
5:00 PM	0	0	1	133	3	0	0	91	5	3	0	2	3	1	2	0	0	7	5	8	0	4	1	0	0	269	1,134
5:15 PM	0	0	0	113	0	0	1	140	4	3	0	7	0	1	2	0	0	7	2	1	0	3	0	0	0	284	1,116
5:30 PM	0	1	0	134	0	0	0	124	2	6	0	3	0	1	4	0	0	4	2	3	0	3	2	1	0	290	1,136
5:45 PM	0	1	1	105	1	0	2	113	5	8	0	2	1	2	2	0	0	4	4	3	0	2	1	1	0	258	1,101
Count Total	0	6	8	987	35	0	11	975	27	36	0	24	6	7	18	0	0	36	25	31	0	20	6	6	0	2,264	0
Peak Hour All	**0**	**4**	**6**	**502**	**31**	**0**	**8**	**507**	**11**	**16**	**0**	**10**	**2**	**2**	**8**	**0**	**0**	**14**	**12**	**16**	**0**	**8**	**2**	**4**	**0**	**1,163**	**0**
Peak Hour HV	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**2%**	**0%**	**-**	**0%**	**1%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	SWB	Total	Bicycles EB	WB	NB	SB	SWB	Total	Pedestrians (Crossing Leg) East	West	North	South	Northeast	Total
4:00 PM	**2**	**2**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**0**	**1**	***6***
4:15 PM	**3**	**3**	**0**	**0**	**0**	***6***	**0**	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	**2**	***3***
4:30 PM	**2**	**0**	**0**	**0**	**0**	***2***	**0**	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**0**	**0**	**3**	***5***
4:45 PM	**2**	**1**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	**2**	***4***
5:00 PM	2	0	0	0	0	*2*	1	0	0	0	0	*1*	0	3	0	1	0	*4*
5:15 PM	2	1	0	0	0	*3*	0	0	0	0	0	*0*	0	5	7	2	4	*18*
5:30 PM	1	2	0	0	0	*3*	1	0	0	0	0	*1*	0	6	0	0	1	*7*
5:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	3	4	2	6	*15*
Count Total	14	9	0	0	0	*23*	2	1	1	0	0	*4*	0	24	13	6	19	*62*
Peak Hr	**9**	**6**	**0**	**0**	**0**	***15***	**0**	**1**	**1**	**0**	**0**	***2***	**0**	**7**	**2**	**1**	**8**	*18*

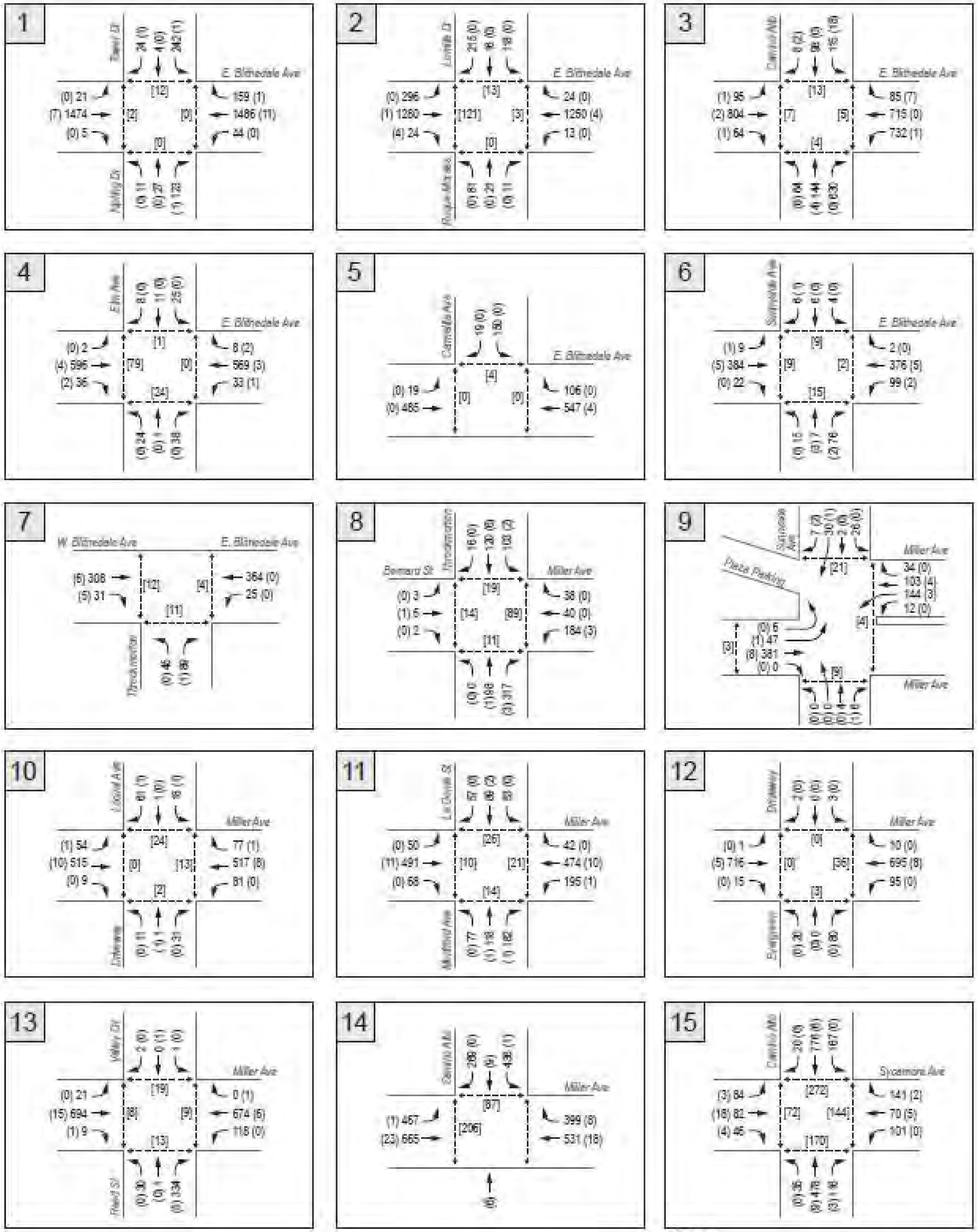
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Blithedale Ave Eastbound					E Blithedale Ave Westbound					Elm Ave NE Northbound					Elm Ave NE Southbound					Alta Vista Ave Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	0
4:15 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	0
4:30 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**15**
5:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13
5:15 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
5:30 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Count Total	0	0	0	14	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
Peak Hour	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	15	**0**

Two-Hour Count Summaries - Bikes

Interval Start	E Blithedale Ave Eastbound					E Blithedale Ave Westbound					Elm Ave NE Northbound					Elm Ave NE Southbound					Alta Vista Ave Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**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**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	2	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2	**0**

Figure F.4



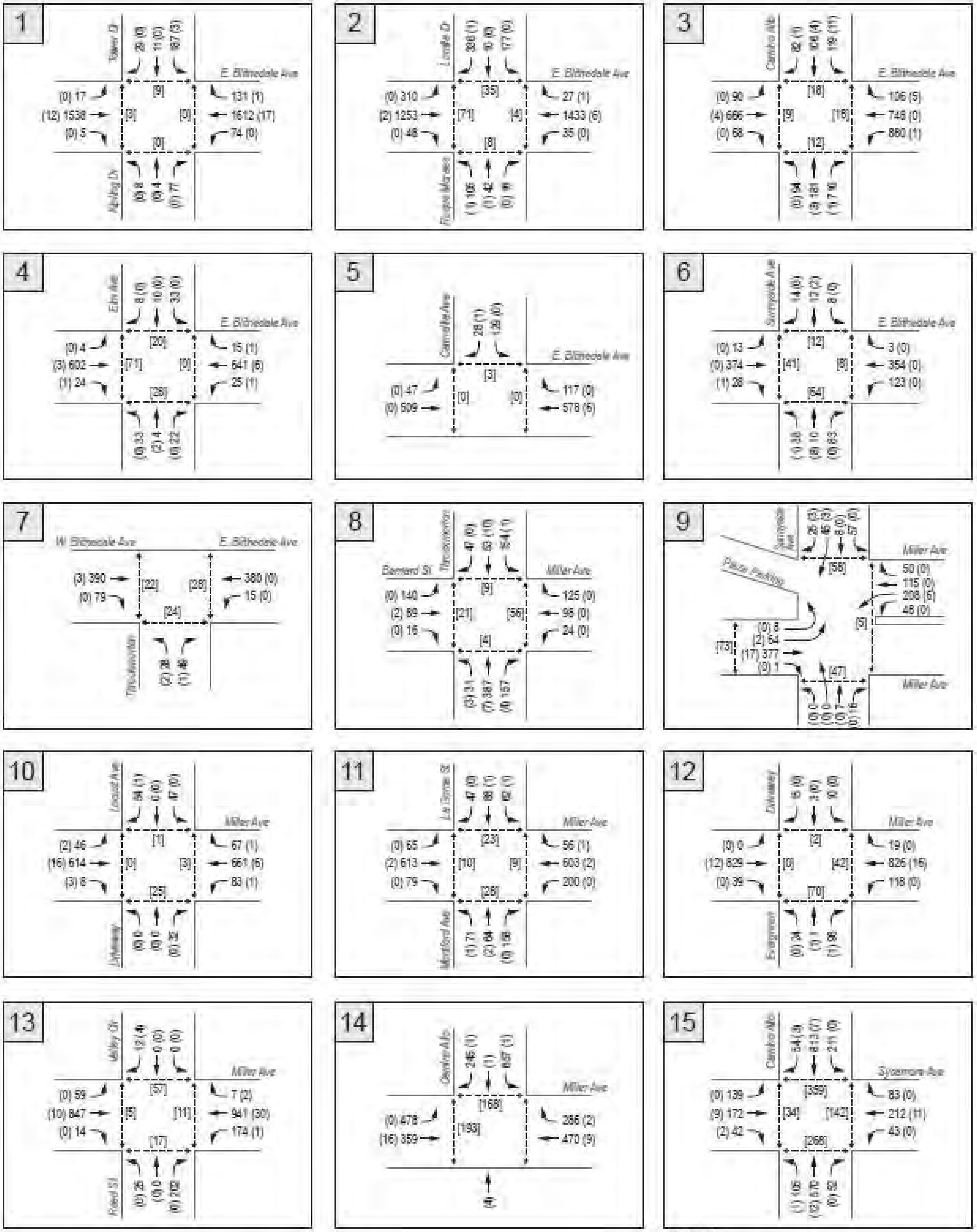
LEGEND
xx Vehicle (xx) Bicycle [xx] Pedestrian

Mill Valley General Plan

Existing AM Peak Hour Volumes

17 August 2012

Figure F.5



LEGEND
xx Vehicle (xx) Bicycle [xx] Pedestrian

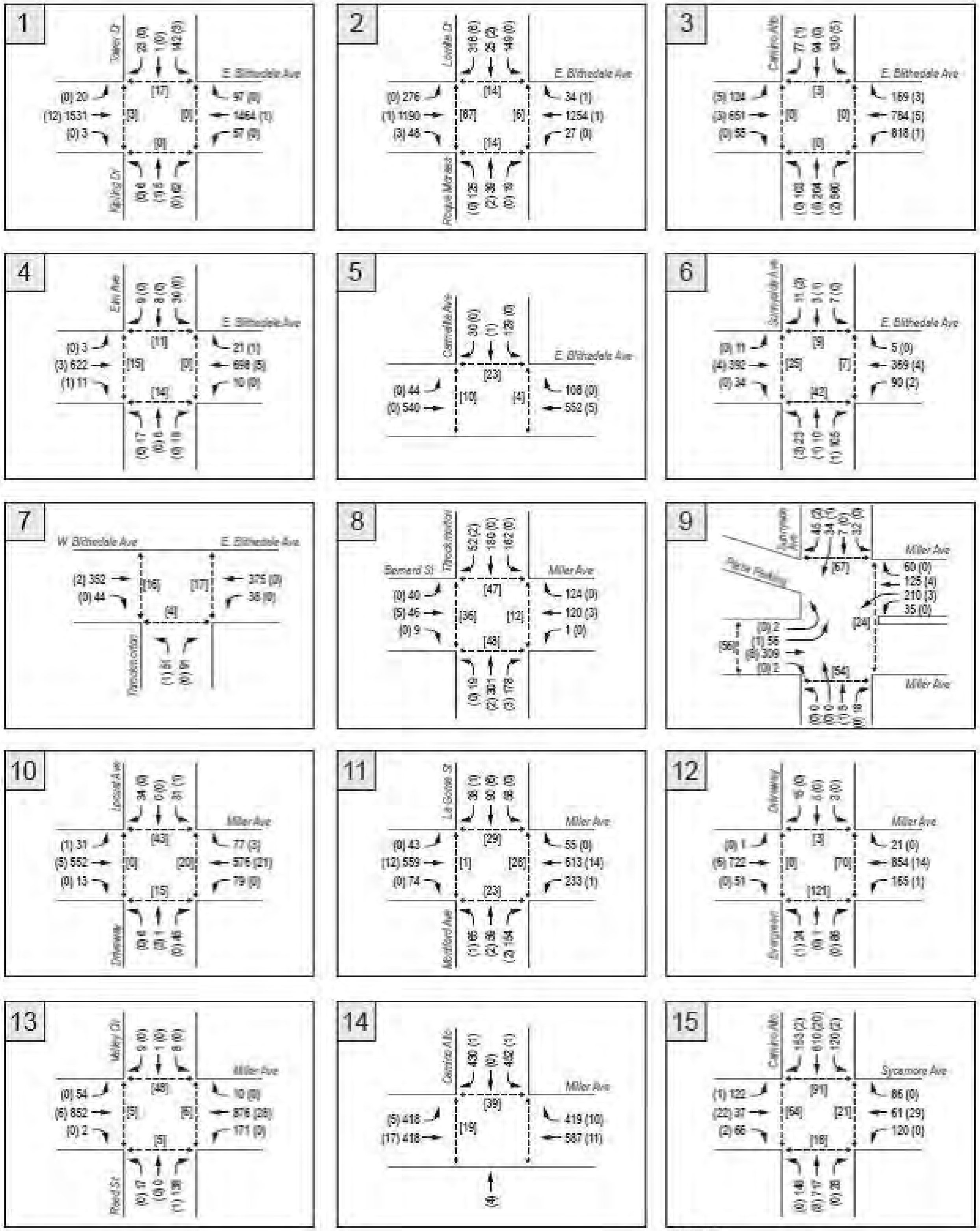
Mill Valley General Plan

Existing Midday Peak Hour Volumes

17 August 2012

Parisi Associates transportation consulting

Figure F.6



Mill Valley General Plan

Existing PM Peak Hour Volumes

17 August 2012

Parisi Associates transportation consulting

Appendix B

Mid-Afternoon Trip Rates

APPENDIX B - MIDDAY PEAK HOUR TRIP RATES

Land Use[1]	ITE Land Use[1]	PM Peak Hour Rate[1]	PM % Distribution[2]	MD % Distribution[2]	MD Peak Hour Rate
Single-Family Detached Housing	210	0.94	8.9%	7.5%	0.79
Multifamily Housing (Low-Rise)	220	0.51	9.7%	6.1%	0.32
Medical-Dental Office Building	720	3.93	9.7%	8.0%	3.24
General Office Building	710	1.44	7.8%	9.9%	1.83
Charter Elementary School	536	0.16	13.1%	17.5%	0.21
Hair Salon[3]	918	1.45	8.3%	8.8%	1.54
Strip Retail Plaza	822	6.59	7.4%	8.0%	7.12
Fine Dining Restaurant[4]	931	7.8	4.5%	8.5%	14.73
Furniture Store	890	0.52	8.4%	13.3%	0.82

Notes:

1. Trip rates are from the ITE Trip Generation Manual, 11th Edition, 2021.
2. Vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition.
3. ITE does not provide vehicle time of day distribution data for hair salons. MD peak Hour rate has been computed using vehicle time of day distribution data for Land Use 820 - Shopping Center.
4. ITE does not provide vehicle time of day distribution data for Fine Dining Restaurants. MD peak Hour rate has been computed using vehicle time of day distribution data for Land Use 832 - High-Turnover (Sit-Down) Restaurant.

Appendix C

Traffic Volumes

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tower Drive/Kipling Drive and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	18	7	165	133	1354	56	114	21	5	1	1053	15	*2942*
Proposed Project Trips	0	0	0	0	0	0	15	0	0	0	142	0	*157*
Existing + Project Conditions	18	7	165	133	1354	56	129	21	5	1	1195	15	*3099*
Cumulative Conditions	18	7	169	136	1385	57	117	21	5	1	1077	15	*3008*
Cumulative + Project Conditions	18	7	169	136	1385	57	132	21	5	1	1219	15	*3165*

Intersection Number: 2
Synchro Node Number: 2
Intersection Name: Lomita Drive/ Roque Moraes Drive and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	229	18	38	11	1107	6	9	30	147	34	1003	179	*2811*
Proposed Project Trips	10	0	14	0	3	0	0	0	20	6	128	0	*181*
Existing + Project Conditions	239	18	52	11	1110	6	9	30	167	40	1131	179	*2992*
Cumulative Conditions	234	18	39	11	1132	6	9	31	150	35	1026	183	*2874*
Cumulative + Project Conditions	244	18	53	11	1135	6	9	31	170	41	1154	183	*3055*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Camino Alto and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	83	106	78	99	712	670	507	127	48	65	622	82	*3199*
Proposed Project Trips	0	1	0	4	6	22	85	7	3	1	45	4	*178*
Existing + Project Conditions	83	107	78	103	718	692	592	134	51	66	667	86	*3377*
Cumulative Conditions	85	108	80	101	728	685	519	130	49	66	636	84	*3271*
Cumulative + Project Conditions	85	109	80	105	734	707	604	137	52	67	681	88	*3449*

Intersection Number: 4
Synchro Node Number: 4
Intersection Name: Elm Avenue and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	13	6	22	38	606	36	18	2	21	28	515	6	*1311*
Proposed Project Trips	0	0	0	0	8	0	0	0	0	0	45	0	*53*
Existing + Project Conditions	13	6	22	38	614	36	18	2	21	28	560	6	*1364*
Cumulative Conditions	13	6	22	39	620	37	18	2	21	29	527	6	*1340*
Cumulative + Project Conditions	13	6	22	39	628	37	18	2	21	29	572	6	*1393*

Intersection Number: 5
Synchro Node Number: 5
Intersection Name: Carmelita Avenue and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	19	0	150	106	547	0	0	0	0	0	485	19	*1326*
Proposed Project Trips	0	0	0	0	0	0	0	0	0	0	46	0	*46*
Existing + Project Conditions	19	0	150	106	547	0	0	0	0	0	531	19	*1372*
Cumulative Conditions	19	0	153	108	559	0	0	0	0	0	496	19	*1354*
Cumulative + Project Conditions	19	0	153	108	559	0	0	0	0	0	542	19	*1400*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: Sunnyside Avenue and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	6	6	4	2	376	99	76	7	15	22	384	9	*1006*
Proposed Project Trips	0	0	0	0	9	0	22	0	7	0	7	0	*45*
Existing + Project Conditions	6	6	4	2	385	99	98	7	22	22	391	9	*1051*
Cumulative Conditions	6	6	4	2	385	101	78	7	15	22	393	9	*1028*
Cumulative + Project Conditions	6	6	4	2	394	101	100	7	22	22	400	9	*1073*

Intersection Number: 7
Synchro Node Number: 7
Intersection Name: Throckmorton Avenue and E. Blithedale Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	0	0	0	364	25	89	0	45	31	308	0	*862*
Proposed Project Trips	0	0	0	0	14	2	6	0	0	0	0	0	*22*
Existing + Project Conditions	0	0	0	0	378	27	95	0	45	31	308	0	*884*
Cumulative Conditions	0	0	0	0	372	26	91	0	46	32	315	0	*882*
Cumulative + Project Conditions	0	0	0	0	386	28	97	0	46	32	315	0	*904*

Intersection Number: 8
Synchro Node Number: 8
Intersection Name: Throckmorton Avenue and Bernard Street/Miller Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	136	108	58	0	204	317	98	0	2	6	3	*932*
Proposed Project Trips	0	0	2	1	0	14	0	0	0	0	0	0	*17*
Existing + Project Conditions	0	136	110	59	0	218	317	98	0	2	6	3	*949*
Cumulative Conditions	0	139	110	59	0	209	324	100	0	2	6	3	*952*
Cumulative + Project Conditions	0	139	112	60	0	223	324	100	0	2	6	3	*969*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Sunnyside Avenue/Miller Lane and Miller Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	7	58	0	34	103	156	0	51	6	0	0	0	*415*
Proposed Project Trips	0	10	0	12	0	9	0	0	0	0	0	0	*31*
Existing + Project Conditions	7	68	0	46	103	165	0	51	6	0	0	0	*446*
Cumulative Conditions	7	59	0	35	105	160	0	52	6	0	0	0	*424*
Cumulative + Project Conditions	7	69	0	47	105	169	0	52	6	0	0	0	*455*

Intersection Number: 10
Synchro Node Number: 10
Intersection Name: Locust Avenue/Driveway and Miller Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	61	1	18	77	517	81	31	1	11	9	515	54	*1376*
Proposed Project Trips	0	0	0	0	6	0	0	0	0	0	24	0	*30*
Existing + Project Conditions	61	1	18	77	523	81	31	1	11	9	539	54	*1406*
Cumulative Conditions	62	1	18	79	529	83	32	1	11	9	527	55	*1407*
Cumulative + Project Conditions	62	1	18	79	535	83	32	1	11	9	551	55	*1437*

Intersection Number: 11
Synchro Node Number: 11
Intersection Name: La Goma Street/Montford Avenue and Miller Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	57	89	53	42	474	195	182	138	77	68	491	50	*1916*
Proposed Project Trips	0	5	4	1	10	9	1	2	1	4	13	7	*57*
Existing + Project Conditions	57	94	57	43	484	204	183	140	78	72	504	57	*1973*
Cumulative Conditions	58	91	54	43	485	199	186	141	79	70	502	51	*1959*
Cumulative + Project Conditions	58	96	58	44	495	208	187	143	80	74	515	58	*2016*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Evergreen Avenue/Driveway and Miller Avenue
Peak Hour: AM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	2	0	3	10	695	95	80	0	20	15	716	1	*1637*
Proposed Project Trips	0	0	0	0	20	0	0	0	0	0	27	0	*47*
Existing + Project Conditions	2	0	3	10	715	95	80	0	20	15	743	1	*1684*
Cumulative Conditions	2	0	3	10	711	97	82	0	20	15	732	1	*1673*
Cumulative + Project Conditions	2	0	3	10	731	97	82	0	20	15	759	1	*1720*

Intersection Number: 13
Synchro Node Number: 13
Intersection Name: Valley Circle/Reed Street and Miller Avenue
Peak Hour: AM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	2	0	1	0	674	118	334	1	30	9	694	21	*1884*
Proposed Project Trips	0	0	0	0	20	0	0	0	0	0	44	4	*68*
Existing + Project Conditions	2	0	1	0	694	118	334	1	30	9	738	25	*1952*
Cumulative Conditions	2	0	1	0	689	121	342	1	31	9	710	21	*1927*
Cumulative + Project Conditions	2	0	1	0	709	121	342	1	31	9	754	25	*1995*

Intersection Number: 14
Synchro Node Number: 14
Intersection Name: Camino Alto and Miller Avenue
Peak Hour: AM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	269	0	438	399	531	0	0	0	0	0	665	467	*2769*
Proposed Project Trips	19	0	11	2	0	0	0	0	0	0	18	52	*102*
Existing + Project Conditions	288	0	449	401	531	0	0	0	0	0	683	519	*2871*
Cumulative Conditions	275	0	448	408	543	0	0	0	0	0	680	478	*2832*
Cumulative + Project Conditions	294	0	459	410	543	0	0	0	0	0	698	530	*2934*

Intersection Number: 15
Synchro Node Number: 15
Intersection Name: Camino Alto and Sycamore Avenue
Peak Hour: AM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	20	776	167	141	70	101	118	478	36	46	82	84	*2119*
Proposed Project Trips	0	29	0	0	0	0	0	57	0	0	0	30	*116*
Existing + Project Conditions	20	805	167	141	70	101	118	535	36	46	82	114	*2235*
Cumulative Conditions	20	794	171	144	72	103	121	489	37	47	84	86	*2168*
Cumulative + Project Conditions	20	823	171	144	72	103	121	546	37	47	84	116	*2284*

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tower Drive/Kipling Drive and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 03/10/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	15	10	154	75	1273	72	107	7	11	2	1322	10	*3058*
Proposed Project Trips	0	0	0	0	22	0	2	0	0	0	13	0	*37*
Existing + Project Conditions	15	10	154	75	1295	72	109	7	11	2	1335	10	*3095*
Cumulative Conditions	15	10	157	77	1302	74	109	7	11	2	1352	10	*3126*
Cumulative + Project Conditions	15	10	157	77	1324	74	111	7	11	2	1365	10	*3163*

Intersection Number: 2
Synchro Node Number: 2
Intersection Name: Lomita Drive/ Roque Moraes Drive and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 03/10/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	263	15	117	23	1043	20	15	23	101	69	1117	209	*3015*
Proposed Project Trips	0	0	0	0	21	0	0	0	18	24	14	0	*77*
Existing + Project Conditions	263	15	117	23	1064	20	15	23	119	93	1131	209	*3092*
Cumulative Conditions	269	15	120	24	1067	20	15	24	103	71	1142	214	*3084*
Cumulative + Project Conditions	269	15	120	24	1088	20	15	24	121	95	1156	214	*3161*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Camino Alto and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 03/10/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	77	113	111	119	620	655	596	211	32	32	619	134	*3319*
Proposed Project Trips	1	4	2	1	12	24	23	3	4	4	13	0	*91*
Existing + Project Conditions	78	117	113	120	632	679	619	214	36	36	632	134	*3410*
Cumulative Conditions	79	116	114	122	634	670	610	216	33	33	633	137	*3397*
Cumulative + Project Conditions	80	120	116	123	646	694	633	219	37	37	646	137	*3488*

Intersection Number: 4
Synchro Node Number: 4
Intersection Name: Elm Avenue and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 03/10/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	16	30	0	23	490	32	28	3	13	25	586	8	*1254*
Proposed Project Trips	0	0	0	0	15	0	0	0	0	0	18	0	*33*
Existing + Project Conditions	16	30	0	23	505	32	28	3	13	25	604	8	*1287*
Cumulative Conditions	16	31	0	24	501	33	29	3	13	26	599	8	*1283*
Cumulative + Project Conditions	16	31	0	24	516	33	29	3	13	26	617	8	*1316*

Intersection Number: 5
Synchro Node Number: 5
Intersection Name: Carmelita Avenue and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	28	0	129	117	578	0	0	0	0	0	509	47	*1408*
Proposed Project Trips	0	0	0	0	11	0	0	0	0	0	10	0	*21*
Existing + Project Conditions	28	0	129	117	589	0	0	0	0	0	519	47	*1429*
Cumulative Conditions	29	0	132	120	591	0	0	0	0	0	521	48	*1441*
Cumulative + Project Conditions	29	0	132	120	602	0	0	0	0	0	531	48	*1462*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: Sunnyside Avenue and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	14	12	8	3	354	123	83	10	38	28	374	13	*1060*
Proposed Project Trips	0	0	0	0	6	3	4	0	4	7	8	0	*32*
Existing + Project Conditions	14	12	8	3	360	126	87	10	42	35	382	13	*1092*
Cumulative Conditions	14	12	8	3	362	126	85	10	39	29	382	13	*1083*
Cumulative + Project Conditions	14	12	8	3	368	129	89	10	43	36	390	13	*1115*

Intersection Number: 7
Synchro Node Number: 7
Intersection Name: Throckmorton Avenue and E. Blithedale Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	380	15	49	0	28	79	390	0	*941*
Proposed Project Trips	0	0	0	0	9	2	1	0	0	1	13	0	*26*
Existing + Project Conditions	0	0	0	0	389	17	50	0	28	80	403	0	*967*
Cumulative Conditions	0	0	0	0	389	15	50	0	29	81	399	0	*963*
Cumulative + Project Conditions	0	0	0	0	398	17	51	0	29	82	412	0	*989*

Intersection Number: 8
Synchro Node Number: 8
Intersection Name: Throckmorton Avenue and Bernard Street/Miller Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	100	154	173	0	72	157	418	0	16	89	140	*1319*
Proposed Project Trips	0	0	2	3	0	9	13	1	0	0	0	0	*28*
Existing + Project Conditions	0	100	156	176	0	81	170	419	0	16	89	140	*1347*
Cumulative Conditions	0	102	157	177	0	74	161	427	0	16	91	143	*1348*
Cumulative + Project Conditions	0	102	159	180	0	83	174	428	0	16	91	143	*1376*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Sunnyside Avenue/Miller Lane and Miller Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	26	110	0	50	115	256	0	71	8	0	0	0	*636*
Proposed Project Trips	0	8	0	5	0	8	0	5	0	0	0	0	*26*
Existing + Project Conditions	26	118	0	55	115	264	0	76	8	0	0	0	*662*
Cumulative Conditions	27	112	0	51	118	262	0	73	8	0	0	0	*651*
Cumulative + Project Conditions	27	120	0	56	118	270	0	78	8	0	0	0	*677*

Intersection Number: 10
Synchro Node Number: 10
Intersection Name: Locust Avenue/Driveway and Miller Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	54	0	47	67	661	83	32	0	0	8	614	46	*1612*
Proposed Project Trips	0	0	0	0	33	0	0	0	0	0	31	0	*64*
Existing + Project Conditions	54	0	47	67	694	83	32	0	0	8	645	46	*1676*
Cumulative Conditions	55	0	48	69	676	85	33	0	0	8	628	47	*1649*
Cumulative + Project Conditions	55	0	48	69	709	85	33	0	0	8	659	47	*1713*

Intersection Number: 11
Synchro Node Number: 11
Intersection Name: La Goma Street/Montford Avenue and Miller Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	47	88	62	56	603	200	158	64	71	79	613	65	*2106*
Proposed Project Trips	9	7	3	4	17	9	7	9	6	1	21	10	*103*
Existing + Project Conditions	56	95	65	60	620	209	165	73	77	80	634	75	*2209*
Cumulative Conditions	48	90	63	57	617	205	162	65	73	81	627	66	*2154*
Cumulative + Project Conditions	57	97	66	61	634	214	169	74	79	82	648	76	*2257*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Evergreen Avenue/Driveway and Miller Avenue
Peak Hour: MD
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	15	3	10	19	826	118	96	1	24	39	829	0	*1980*
Proposed Project Trips	0	0	0	0	30	0	0	0	0	0	31	0	*61*
Existing + Project Conditions	15	3	10	19	856	118	96	1	24	39	860	0	*2041*
Cumulative Conditions	15	3	10	19	845	121	98	1	25	40	848	0	*2025*
Cumulative + Project Conditions	15	3	10	19	875	121	98	1	25	40	879	0	*2086*

Intersection Number: 13
Synchro Node Number: 13
Intersection Name: Valley Circle/Reed Street and Miller Avenue
Peak Hour: MD
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	12	0	0	7	941	174	202	0	26	14	847	59	*2282*
Proposed Project Trips	0	0	0	0	31	0	0	0	0	0	28	7	*66*
Existing + Project Conditions	12	0	0	7	972	174	202	0	26	14	875	66	*2348*
Cumulative Conditions	12	0	0	7	962	178	207	0	27	14	866	60	*2333*
Cumulative + Project Conditions	12	0	0	7	993	178	207	0	27	14	894	67	*2399*

Intersection Number: 14
Synchro Node Number: 14
Intersection Name: Camino Alto and Miller Avenue
Peak Hour: MD
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	245	0	657	286	470	0	0	0	0	0	359	478	*2495*
Proposed Project Trips	13	0	7	10	17	0	0	0	0	0	11	21	*79*
Existing + Project Conditions	258	0	664	296	487	0	0	0	0	0	370	499	*2574*
Cumulative Conditions	251	0	672	292	481	0	0	0	0	0	367	489	*2552*
Cumulative + Project Conditions	264	0	679	302	498	0	0	0	0	0	378	510	*2631*

Intersection Number: 15
Synchro Node Number: 15
Intersection Name: Camino Alto and Sycamore Avenue
Peak Hour: MD
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	54	813	211	83	212	43	52	570	106	42	172	139	*2497*
Proposed Project Trips	12	19	0	0	0	0	0	19	0	0	0	10	*60*
Existing + Project Conditions	66	832	211	83	212	43	52	589	106	42	172	149	*2557*
Cumulative Conditions	55	831	216	85	217	44	53	583	108	43	176	142	*2553*
Cumulative + Project Conditions	67	850	216	85	217	44	53	602	108	43	176	152	*2613*

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tower Drive/Kipling Drive and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	12	8	96	99	1111	70	69	13	10	2	1361	11	*2862*
Proposed Project Trips	0	0	0	0	99	0	6	0	0	0	32	0	*137*
Existing + Project Conditions	12	8	96	99	1210	70	75	13	10	2	1393	11	*2999*
Cumulative Conditions	12	8	98	101	1136	72	71	13	10	2	1392	11	*2926*
Cumulative + Project Conditions	12	8	98	101	1235	72	77	13	10	2	1424	11	*3063*

Intersection Number: 2
Synchro Node Number: 2
Intersection Name: Lomita Drive/ Roque Moraes Drive and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	186	12	80	17	930	22	5	28	114	74	1148	190	*2806*
Proposed Project Trips	0	0	0	9	90	0	0	0	19	32	33	13	*196*
Existing + Project Conditions	186	12	80	26	1020	22	5	28	133	106	1181	203	*3002*
Cumulative Conditions	190	12	82	17	951	22	5	29	117	76	1174	194	*2869*
Cumulative + Project Conditions	190	12	82	26	1041	22	5	29	136	108	1207	207	*3065*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Camino Alto and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	71	100	112	99	579	583	611	234	38	31	636	141	*3235*
Proposed Project Trips	3	8	4	1	33	73	47	4	3	7	28	0	*211*
Existing + Project Conditions	74	108	116	100	612	656	658	238	41	38	664	141	*3446*
Cumulative Conditions	73	102	115	101	592	596	625	239	39	32	650	144	*3308*
Cumulative + Project Conditions	76	110	119	102	625	669	672	243	42	39	678	144	*3519*

Intersection Number: 4
Synchro Node Number: 4
Intersection Name: Elm Avenue and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 03/10/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	16	12	14	31	509	16	10	2	10	31	502	10	*1163*
Proposed Project Trips	0	0	0	0	36	0	0	0	0	0	34	0	*70*
Existing + Project Conditions	16	12	14	31	545	16	10	2	10	31	536	10	*1233*
Cumulative Conditions	16	12	14	32	521	16	10	2	10	32	513	10	*1188*
Cumulative + Project Conditions	16	12	14	32	557	16	10	2	10	32	547	10	*1258*

Intersection Number: 5
Synchro Node Number: 5
Intersection Name: Carmelita Avenue and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	30	0	129	108	552	0	0	0	0	0	540	44	*1403*
Proposed Project Trips	0	0	0	0	33	0	0	0	0	0	21	0	*54*
Existing + Project Conditions	30	0	129	108	585	0	0	0	0	0	561	44	*1457*
Cumulative Conditions	31	0	132	110	565	0	0	0	0	0	552	45	*1435*
Cumulative + Project Conditions	31	0	132	110	598	0	0	0	0	0	573	45	*1489*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: Sunnyside Avenue and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	11	3	7	5	359	90	106	10	23	34	392	11	*1051*
Proposed Project Trips	0	0	0	0	11	11	5	0	5	15	17	0	*64*
Existing + Project Conditions	11	3	7	5	370	101	111	10	28	49	409	11	*1115*
Cumulative Conditions	11	3	7	5	367	92	108	10	24	35	401	11	*1074*
Cumulative + Project Conditions	11	3	7	5	378	103	113	10	29	50	418	11	*1138*

Intersection Number: 7
Synchro Node Number: 7
Intersection Name: Throckmorton Avenue and E. Blithedale Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	0	0	0	375	38	91	0	51	44	352	0	*951*
Proposed Project Trips	0	0	0	0	11	5	3	0	1	1	29	0	*50*
Existing + Project Conditions	0	0	0	0	386	43	94	0	52	45	381	0	*1001*
Cumulative Conditions	0	0	0	0	384	39	93	0	52	45	360	0	*973*
Cumulative + Project Conditions	0	0	0	0	395	44	96	0	53	46	389	0	*1023*

Intersection Number: 8
Synchro Node Number: 8
Intersection Name: Throckmorton Avenue and Bernard Street/Miller Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	232	162	184	0	61	178	320	0	9	46	40	*1232*
Proposed Project Trips	0	1	2	3	0	11	29	1	0	0	0	0	*47*
Existing + Project Conditions	0	233	164	187	0	72	207	321	0	9	46	40	*1279*
Cumulative Conditions	0	237	166	188	0	62	182	327	0	9	47	41	*1259*
Cumulative + Project Conditions	0	238	168	191	0	73	211	328	0	9	47	41	*1306*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Sunnyside Avenue/Miller Lane and Miller Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	45	73	0	60	125	245	0	61	2	0	0	0	*611*
Proposed Project Trips	0	17	0	7	0	10	0	11	0	0	0	0	*45*
Existing + Project Conditions	45	90	0	67	125	255	0	72	2	0	0	0	*656*
Cumulative Conditions	46	75	0	61	128	251	0	62	2	0	0	0	*625*
Cumulative + Project Conditions	46	92	0	68	128	261	0	73	2	0	0	0	*670*

Intersection Number: 10
Synchro Node Number: 10
Intersection Name: Locust Avenue/Driveway and Miller Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	34	0	31	77	576	79	45	1	6	13	552	31	*1445*
Proposed Project Trips	0	0	0	0	52	0	0	0	0	0	45	0	*97*
Existing + Project Conditions	34	0	31	77	628	79	45	1	6	13	597	31	*1542*
Cumulative Conditions	35	0	32	79	589	81	46	1	6	13	565	32	*1479*
Cumulative + Project Conditions	35	0	32	79	641	81	46	1	6	13	610	32	*1576*

Intersection Number: 11
Synchro Node Number: 11
Intersection Name: La Goma Street/Montford Avenue and Miller Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	38	90	58	55	613	233	154	59	65	74	559	43	*2041*
Proposed Project Trips	19	6	2	4	21	13	11	10	11	0	31	15	*143*
Existing + Project Conditions	57	96	60	59	634	246	165	69	76	74	590	58	*2184*
Cumulative Conditions	39	92	59	56	627	238	157	60	66	76	572	44	*2086*
Cumulative + Project Conditions	58	98	61	60	648	251	168	70	77	76	603	59	*2229*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Evergreen Avenue/Driveway and Miller Avenue
Peak Hour: PM
Date of Analysis: 08/01/22
Count Date: 08/17/12

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	15	5	3	21	854	165	93	1	24	51	722	1	*1955*
Proposed Project Trips	0	0	0	0	38	0	0	0	0	0	44	0	*82*
Existing + Project Conditions	15	5	3	21	892	165	93	1	24	51	766	1	*2037*
Cumulative Conditions	15	5	3	21	873	169	95	1	25	52	738	1	*1998*
Cumulative + Project Conditions	15	5	3	21	911	169	95	1	25	52	782	1	*2080*

Intersection Number: 13
Synchro Node Number: 13
Intersection Name: Valley Circle/Reed Street and Miller Avenue
Peak Hour: PM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	9	1	8	10	876	171	138	0	17	2	852	54	*2138*
Proposed Project Trips	0	0	0	0	47	0	0	0	0	0	40	9	*96*
Existing + Project Conditions	9	1	8	10	923	171	138	0	17	2	892	63	*2234*
Cumulative Conditions	9	1	8	10	896	175	141	0	17	2	871	55	*2185*
Cumulative + Project Conditions	9	1	8	10	943	175	141	0	17	2	911	64	*2281*

Intersection Number: 14
Synchro Node Number: 14
Intersection Name: Camino Alto and Miller Avenue
Peak Hour: PM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	430	0	452	419	587	0	0	0	0	0	418	418	*2724*
Proposed Project Trips	35	0	5	11	19	0	0	0	0	0	7	37	*114*
Existing + Project Conditions	465	0	457	430	606	0	0	0	0	0	425	455	*2838*
Cumulative Conditions	440	0	462	429	600	0	0	0	0	0	427	427	*2785*
Cumulative + Project Conditions	475	0	467	440	619	0	0	0	0	0	434	464	*2899*

Intersection Number: 15
Synchro Node Number: 15
Intersection Name: Camino Alto and Sycamore Avenue
Peak Hour: PM
Count Date: 08/17/12
Date of Analysis: 08/01/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	153	610	120	85	61	120	28	717	148	66	37	122	*2267*
Proposed Project Trips	33	47	0	0	0	0	0	37	0	0	0	17	*134*
Existing + Project Conditions	186	657	120	85	61	120	28	754	148	66	37	139	*2401*
Cumulative Conditions	156	624	123	87	62	123	29	733	151	67	38	125	*2318*
Cumulative + Project Conditions	189	671	123	87	62	123	29	770	151	67	38	142	*2452*

Appendix D

Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1053	1	56	1354	133	5	21	114	165	7	18
Future Volume (veh/h)	15	1053	1	56	1354	133	5	21	114	165	7	18
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	16	1145	1	61	1472	145	5	23	0	179	8	20
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	1772	2	75	1715	808	39	137		172	5	432
Arrive On Green	0.05	0.49	0.51	0.04	0.48	0.51	0.30	0.27	0.00	0.30	0.27	0.27
Sat Flow, veh/h	1781	3643	3	1781	3554	1585	0	501	1585	396	18	1585
Grp Volume(v), veh/h	16	558	588	61	1472	145	28	0	0	187	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1870	1781	1777	1585	501	0	1585	414	0	1585
Q Serve(g_s), s	1.0	25.9	25.9	3.7	40.2	5.4	0.0	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.0	25.9	25.9	3.7	40.2	5.4	33.0	0.0	0.0	33.0	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.18		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	81	864	909	75	1715	808	189	0		188	0	432
V/C Ratio(X)	0.20	0.65	0.65	0.82	0.86	0.18	0.15	0.00		0.99	0.00	0.05
Avail Cap(c_a), veh/h	81	864	909	97	1715	808	189	0		188	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	21.2	21.2	52.3	25.1	14.5	31.8	0.0	0.0	45.2	0.0	29.5
Incr Delay (d2), s/veh	1.2	3.7	3.5	32.4	5.8	0.5	0.4	0.0	0.0	63.7	0.0	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	0.5	11.3	11.9	2.3	17.6	2.0	0.5	0.0	0.0	8.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	24.9	24.7	84.7	30.9	15.0	32.1	0.0	0.0	108.8	0.0	29.5
LnGrp LOS	D	C	C	F	C	B	C	A		F	A	C
Approach Vol, veh/h		1162			1678			28			207	
Approach Delay, s/veh		25.2			31.5			32.1			101.2	
Approach LOS		C			C			C			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	61.4		37.0	12.0	61.0		37.0				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	6.7	28.9		35.0	4.0	43.2		35.0				
Green Ext Time (p_c), s	0.0	8.8		0.0	0.0	8.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			33.8									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1003	34	6	1107	11	147	30	9	38	18	229
Future Volume (veh/h)	179	1003	34	6	1107	11	147	30	9	38	18	229
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	195	1090	37	7	1203	12	160	33	10	41	20	249
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	204	1824	62	64	2590	26	135	104	32	194	94	252
Arrive On Green	0.06	0.52	0.54	0.04	0.50	0.52	0.10	0.08	0.08	0.18	0.16	0.16
Sat Flow, veh/h	3456	3507	119	1781	5213	52	1781	1378	417	1216	593	1585
Grp Volume(v), veh/h	195	552	575	7	786	429	160	0	43	61	0	249
Grp Sat Flow(s),veh/h/ln	1728	1777	1849	1781	1702	1861	1781	0	1795	1810	0	1585
Q Serve(g_s), s	7.9	30.3	30.3	0.5	21.1	21.1	10.6	0.0	3.2	4.0	0.0	21.9
Cycle Q Clear(g_c), s	7.9	30.3	30.3	0.5	21.1	21.1	10.6	0.0	3.2	4.0	0.0	21.9
Prop In Lane	1.00		0.06	1.00		0.03	1.00		0.23	0.67		1.00
Lane Grp Cap(c), veh/h	204	924	962	64	1691	925	135	0	136	288	0	252
V/C Ratio(X)	0.96	0.60	0.60	0.11	0.46	0.46	1.19	0.00	0.32	0.21	0.00	0.99
Avail Cap(c_a), veh/h	395	924	962	89	1691	925	303	0	305	321	0	281
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	65.7	23.4	23.3	65.3	23.0	23.0	63.2	0.0	61.3	50.3	0.0	58.7
Incr Delay (d2), s/veh	20.7	2.8	2.7	0.8	0.9	1.7	101.5	0.0	1.3	0.4	0.0	48.3
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	4.1	13.4	13.8	0.3	8.7	9.7	8.5	0.0	1.5	1.9	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.4	26.2	26.1	66.1	24.0	24.7	164.7	0.0	62.6	50.7	0.0	107.0
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1322			1222			203			310	
Approach Delay, s/veh		35.0			24.5			143.1			95.9	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	80.8		29.5	15.2	77.5		17.8				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s	10.0	58.1		* 28	19.0	49.1		26.8				
Max Q Clear Time (g_c+I1), s	3.5	33.3		24.9	10.9	24.1		12.6				
Green Ext Time (p_c), s	0.0	8.5		0.3	0.4	9.3		0.9				

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	622	65	670	712	99	48	127	507	78	106	83
Future Volume (veh/h)	82	622	65	670	712	99	48	127	507	78	106	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	89	676	71	728	774	108	52	138	551	85	115	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	123	1495	667	811	1856	259	78	258	591	118	313	265
Arrive On Green	0.07	0.42	0.42	0.23	0.59	0.59	0.04	0.14	0.14	0.07	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	3456	3132	437	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	89	676	71	728	439	443	52	138	551	85	115	90
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1792	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.9	19.1	3.1	28.6	18.7	18.7	4.0	9.6	13.9	6.5	7.6	7.0
Cycle Q Clear(g_c), s	6.9	19.1	3.1	28.6	18.7	18.7	4.0	9.6	13.9	6.5	7.6	7.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	1495	667	811	1053	1062	78	258	591	118	313	265
V/C Ratio(X)	0.72	0.45	0.11	0.90	0.42	0.42	0.67	0.53	0.93	0.72	0.37	0.34
Avail Cap(c_a), veh/h	178	1495	667	889	1053	1062	153	389	702	216	456	386
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	63.8	29.0	16.3	51.9	15.4	15.4	65.9	56.1	42.2	64.1	51.7	51.5
Incr Delay (d2), s/veh	7.7	1.0	0.3	11.2	1.2	1.2	9.4	1.7	17.6	7.9	0.7	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	3.4	8.4	1.5	13.7	7.9	8.0	2.0	4.7	6.6	3.2	3.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.6	30.0	16.7	63.1	16.6	16.6	75.4	57.8	59.8	72.0	52.4	52.2
LnGrp LOS	E	C	B	E	B	B	E	E	E	E	D	D
Approach Vol, veh/h		836			1610			741			290	
Approach Delay, s/veh		33.3			37.6			60.5			58.1	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.8	63.8	10.1	28.3	13.7	87.9	14.2	24.2
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	31.6	22.1	7.0	10.6	9.9	21.7	9.5	16.9
Green Ext Time (p_c), s	1.3	4.7	0.0	0.9	0.1	6.8	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	515	28	36	606	38	21	2	18	22	6	13
Future Volume (veh/h)	6	515	28	36	606	38	21	2	18	22	6	13
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	7	560	30	39	659	41	23	2	20	24	7	14
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	76	1331	71	811	1326	83	159	11	50	164	24	36
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	5	1748	93	826	1742	108	727	157	707	773	336	501
Grp Volume(v), veh/h	597	0	0	39	0	700	45	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1846	0	0	826	0	1851	1592	0	0	1609	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	0.0	0.0	0.4	0.0	7.4	1.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.06	0.51		0.44	0.53		0.31
Lane Grp Cap(c), veh/h	1477	0	0	811	0	1409	220	0	0	223	0	0
V/C Ratio(X)	0.40	0.00	0.00	0.05	0.00	0.50	0.20	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	1477	0	0	811	0	1409	792	0	0	802	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.1	0.0	0.0	1.5	0.0	2.3	22.4	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.0	1.3	0.5	0.0	0.0	0.4	0.0	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	0.8	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.0	0.0	1.6	0.0	3.6	22.9	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		597			739			45			45	
Approach Delay, s/veh		3.0			3.5			22.9			22.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	43.0	7.6	43.0	7.6
Change Period (Y+Rc), s	4.5	4.0	4.5	4.0
Max Green Setting (Gmax), s	38.5	23.0	38.5	23.0
Max Q Clear Time (g_c+I1), s	7.7	3.2	9.4	3.2
Green Ext Time (p_c), s	4.5	0.1	5.9	0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.5
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	485	547	106	150	19
Future Vol, veh/h	19	485	547	106	150	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	21	527	595	115	163	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	710	0	-	0	1222	653
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	889	-	-	-	198	467
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	889	-	-	-	191	467
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	86.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	889	-	-	-	205
HCM Lane V/C Ratio	0.023	-	-	-	0.896
HCM Control Delay (s)	9.1	0	-	-	86.5
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	7.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	384	22	99	376	2	15	7	76	4	6	6
Future Vol, veh/h	9	384	22	99	376	2	15	7	76	4	6	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	10	417	24	108	409	2	16	8	83	4	7	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	411	0	0	441	0	0	1082	1076	429	1121	1087	410
Stage 1	-	-	-	-	-	-	449	449	-	626	626	-
Stage 2	-	-	-	-	-	-	633	627	-	495	461	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1148	-	-	1119	-	-	195	219	626	183	216	642
Stage 1	-	-	-	-	-	-	589	572	-	472	477	-
Stage 2	-	-	-	-	-	-	468	476	-	556	565	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1148	-	-	1119	-	-	168	189	626	138	187	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	189	-	138	187	-
Stage 1	-	-	-	-	-	-	582	565	-	466	417	-
Stage 2	-	-	-	-	-	-	399	417	-	470	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.8	17.4	22.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	396	1148	-	-	1119	-	-	227
HCM Lane V/C Ratio	0.269	0.009	-	-	0.096	-	-	0.077
HCM Control Delay (s)	17.4	8.2	0	-	8.6	0	-	22.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	0.2

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	31	25	364	45	89
Future Vol, veh/h	308	31	25	364	45	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	335	34	27	396	49	97
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.3	13.8	10
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	34%	0%	6%
Vol Thru, %	0%	91%	94%
Vol Right, %	66%	9%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	134	339	389
LT Vol	45	0	25
Through Vol	0	308	364
RT Vol	89	31	0
Lane Flow Rate	146	368	423
Geometry Grp	1	1	1
Degree of Util (X)	0.217	0.487	0.559
Departure Headway (Hd)	5.357	4.754	4.757
Convergence, Y/N	Yes	Yes	Yes
Cap	663	752	753
Service Time	3.455	2.824	2.826
HCM Lane V/C Ratio	0.22	0.489	0.562
HCM Control Delay	10	12.3	13.8
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.8	2.7	3.5

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	6	2	204	0	58	0	98	317	108	136	0
Future Vol, veh/h	3	6	2	204	0	58	0	98	317	108	136	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	7	2	222	0	63	0	107	345	117	148	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.5	13.4	11.9	12.6
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	27%	78%	44%
Vol Thru, %	100%	0%	55%	0%	56%
Vol Right, %	0%	100%	18%	22%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	317	11	262	244
LT Vol	0	0	3	204	108
Through Vol	98	0	6	0	136
RT Vol	0	317	2	58	0
Lane Flow Rate	107	345	12	285	265
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.171	0.487	0.021	0.452	0.414
Departure Headway (Hd)	5.792	5.083	6.26	5.713	5.613
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	710	570	629	642
Service Time	3.528	2.819	4.32	3.75	3.652
HCM Lane V/C Ratio	0.173	0.486	0.021	0.453	0.413
HCM Control Delay	9.7	12.6	9.5	13.4	12.6
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.6	2.7	0.1	2.3	2

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	156	103	34	6	51	0	0	58	7
Future Vol, veh/h	0	0	0	156	103	34	6	51	0	0	58	7
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	170	112	37	7	55	0	0	63	8
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.2	8.3	8.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	11%	100%	0%	0%
Vol Thru, %	89%	0%	75%	89%
Vol Right, %	0%	0%	25%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	156	137	65
LT Vol	6	156	0	0
Through Vol	51	0	103	58
RT Vol	0	0	34	7
Lane Flow Rate	62	170	149	71
Geometry Grp	2	7	7	2
Degree of Util (X)	0.083	0.253	0.194	0.092
Departure Headway (Hd)	4.805	5.374	4.698	4.709
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	747	673	768	762
Service Time	2.824	3.074	2.398	2.728
HCM Lane V/C Ratio	0.083	0.253	0.194	0.093
HCM Control Delay	8.3	9.9	8.5	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1	0.7	0.3

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	54	515	9	81	517	77	11	1	31	18	1	61
Future Vol, veh/h	54	515	9	81	517	77	11	1	31	18	1	61
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	59	560	10	88	562	84	12	1	34	20	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	646	0	0	570	0	0	1141	1505	285	1179	1468	323
Stage 1	-	-	-	-	-	-	683	683	-	780	780	-
Stage 2	-	-	-	-	-	-	458	822	-	399	688	-
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	935	-	-	999	-	-	156	120	712	146	127	673
Stage 1	-	-	-	-	-	-	405	447	-	354	404	-
Stage 2	-	-	-	-	-	-	552	386	-	598	445	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	935	-	-	999	-	-	117	94	712	115	99	673
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	190	-	218	196	-
Stage 1	-	-	-	-	-	-	368	406	-	321	348	-
Stage 2	-	-	-	-	-	-	427	332	-	516	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.5	14.2	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	935	-	-	999	-	-	449
HCM Lane V/C Ratio	0.107	0.063	-	-	0.088	-	-	0.194
HCM Control Delay (s)	14.2	9.1	0.3	-	9	0.5	-	14.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.3	-	-	0.7

Intersection	
Intersection Delay, s/veh	57.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	491	68	195	474	42	77	138	182	53	89	57
Future Vol, veh/h	50	491	68	195	474	42	77	138	182	53	89	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	534	74	212	515	46	84	150	198	58	97	62
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	77.7	55.1	37.4	41
HCM LOS	F	F	E	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	0%	100%	0%	0%	100%	0%	0%	27%
Vol Thru, %	64%	0%	0%	100%	71%	0%	100%	79%	45%
Vol Right, %	0%	100%	0%	0%	29%	0%	0%	21%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	182	50	327	232	195	316	200	199
LT Vol	77	0	50	0	0	195	0	0	53
Through Vol	138	0	0	327	164	0	316	158	89
RT Vol	0	182	0	0	68	0	0	42	57
Lane Flow Rate	234	198	54	356	252	212	343	217	216
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.758	0.594	0.175	1.096	0.76	0.65	1.005	0.627	0.718
Departure Headway (Hd)	12.115	11.197	11.619	11.09	10.872	11.398	10.868	10.712	12.315
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	301	324	309	327	332	320	337	339	296
Service Time	9.815	8.897	9.394	8.864	8.646	9.098	8.568	8.412	10.015
HCM Lane V/C Ratio	0.777	0.611	0.175	1.089	0.759	0.662	1.018	0.64	0.73
HCM Control Delay	44.6	29	16.9	112.7	41.3	33	84.8	29.8	41
HCM Lane LOS	E	D	C	F	E	D	F	D	E
HCM 95th-tile Q	5.7	3.6	0.6	13.6	5.9	4.3	11.3	4	5.1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	716	15	95	695	10	20	0	80	3	0	2
Future Vol, veh/h	1	716	15	95	695	10	20	0	80	3	0	2
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	778	16	103	755	11	22	0	87	3	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	766	0	0	794	0	0	1372	-	397	1358	1763	383
Stage 1	-	-	-	-	-	-	788	-	-	967	967	-
Stage 2	-	-	-	-	-	-	584	-	-	391	796	-
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	843	-	-	823	-	-	105	0	602	107	83	615
Stage 1	-	-	-	-	-	-	350	0	-	273	331	-
Stage 2	-	-	-	-	-	-	465	0	-	605	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	843	-	-	823	-	-	87	-	602	76	65	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	202	-	-	183	155	-
Stage 1	-	-	-	-	-	-	349	-	-	272	259	-
Stage 2	-	-	-	-	-	-	362	-	-	517	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	12	19.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	602	843	-	-	823	-	-	255
HCM Lane V/C Ratio	0.144	0.001	-	-	0.125	-	-	0.021
HCM Control Delay (s)	12	9.3	-	-	10	0.9	-	19.4
HCM Lane LOS	B	A	-	-	B	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	694	9	118	674	0	30	1	334	1	0	2
Future Vol, veh/h	21	694	9	118	674	0	30	1	334	1	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	23	754	10	128	733	0	33	1	363	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	733	0	0	764	0	0	1428	1794	382	1413	1799	367
Stage 1	-	-	-	-	-	-	805	805	-	989	989	-
Stage 2	-	-	-	-	-	-	623	989	-	424	810	-
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	868	-	-	845	-	-	95	80	616	98	79	630
Stage 1	-	-	-	-	-	-	342	393	-	265	323	-
Stage 2	-	-	-	-	-	-	440	323	-	578	391	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	868	-	-	845	-	-	74	57	616	31	56	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	222	185	-	89	171	-
Stage 1	-	-	-	-	-	-	326	375	-	253	241	-
Stage 2	-	-	-	-	-	-	327	241	-	226	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2.3	28.6	22.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	535	868	-	-	845	-	-	208
HCM Lane V/C Ratio	0.742	0.026	-	-	0.152	-	-	0.016
HCM Control Delay (s)	28.6	9.3	0.2	-	10	0.9	-	22.6
HCM Lane LOS	D	A	A	-	B	A	-	C
HCM 95th %tile Q(veh)	6.3	0.1	-	-	0.5	-	-	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	467	665	531	399	438	269
Future Volume (veh/h)	467	665	531	399	438	269
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	508	723	577	434	476	0
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	612	2042	1229	548	1112	
Arrive On Green	0.18	0.57	0.35	0.35	0.32	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	508	723	577	434	476	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	12.3	9.5	11.0	21.5	9.4	0.0
Cycle Q Clear(g_c), s	12.3	9.5	11.0	21.5	9.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	612	2042	1229	548	1112	
V/C Ratio(X)	0.83	0.35	0.47	0.79	0.43	
Avail Cap(c_a), veh/h	814	4411	3390	1512	1112	
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	0.00
Uniform Delay (d), s/veh	34.5	9.9	22.2	25.6	23.2	0.0
Incr Delay (d2), s/veh	5.5	0.1	0.3	2.6	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	5.5	3.4	4.5	8.1	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.0	10.0	22.5	28.2	24.4	0.0
LnGrp LOS	D	A	C	C	C	
Approach Vol, veh/h		1231	1011		476	
Approach Delay, s/veh		22.4	25.0		24.4	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	54.5	32.5	19.9	34.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	108.0	28.0	20.5	83.0
Max Q Clear Time (g_c+I1), s	11.5	11.4	14.3	23.5
Green Ext Time (p_c), s	6.1	1.6	1.1	6.6

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	82	46	101	70	141	36	478	118	167	776	20
Future Volume (veh/h)	84	82	46	101	70	141	36	478	118	167	776	20
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	89	50	110	76	153	39	520	128	182	843	22
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	210	118	184	107	214	74	723	177	176	1106	29
Arrive On Green	0.10	0.19	0.19	0.10	0.19	0.19	0.04	0.26	0.26	0.10	0.31	0.31
Sat Flow, veh/h	1781	1125	632	1781	554	1115	1781	2829	693	1781	3538	92
Grp Volume(v), veh/h	91	0	139	110	0	229	39	326	322	182	423	442
Grp Sat Flow(s),veh/h/ln	1781	0	1757	1781	0	1670	1781	1777	1746	1781	1777	1854
Q Serve(g_s), s	2.5	0.0	3.5	3.0	0.0	6.5	1.1	8.5	8.5	5.0	10.9	10.9
Cycle Q Clear(g_c), s	2.5	0.0	3.5	3.0	0.0	6.5	1.1	8.5	8.5	5.0	10.9	10.9
Prop In Lane	1.00		0.36	1.00		0.67	1.00		0.40	1.00		0.05
Lane Grp Cap(c), veh/h	174	0	329	184	0	321	74	454	446	176	555	579
V/C Ratio(X)	0.52	0.00	0.42	0.60	0.00	0.71	0.53	0.72	0.72	1.03	0.76	0.76
Avail Cap(c_a), veh/h	915	0	902	880	0	857	176	632	621	176	632	659
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	21.7	0.0	18.2	21.7	0.0	19.1	23.8	17.2	17.2	22.8	15.7	15.7
Incr Delay (d2), s/veh	2.4	0.0	0.9	3.1	0.0	2.9	5.6	2.4	2.5	77.2	4.8	4.6
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	0.0	1.4	1.3	0.0	2.5	0.5	3.3	3.3	5.7	4.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	19.0	24.8	0.0	22.1	29.4	19.6	19.7	100.0	20.5	20.3
LnGrp LOS	C	A	B	C	A	C	C	B	B	F	C	C
Approach Vol, veh/h		230			339			687			1047	
Approach Delay, s/veh		21.0			23.0			20.2			34.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	17.4	9.7	14.0	6.6	20.3	9.5	14.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	25.0	26.0	5.0	18.0	26.0	26.0
Max Q Clear Time (g_c+I1), s	7.0	10.5	5.0	5.5	3.1	12.9	4.5	8.5
Green Ext Time (p_c), s	0.0	2.4	0.2	0.7	0.0	2.4	0.2	1.2

Intersection Summary		
HCM 6th Ctrl Delay		27.1
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1322	2	72	1273	75	11	7	107	154	10	15
Future Volume (veh/h)	10	1322	2	72	1273	75	11	7	107	154	10	15
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	11	1437	2	78	1384	82	12	8	0	167	11	16
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	2211	3	84	2163	1008	72	32		229	11	233
Arrive On Green	0.05	0.61	0.63	0.05	0.61	0.64	0.17	0.15	0.00	0.17	0.15	0.15
Sat Flow, veh/h	1781	3641	5	1781	3554	1585	135	220	1585	1129	74	1585
Grp Volume(v), veh/h	11	701	738	78	1384	82	20	0	0	178	0	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	356	0	1585	1203	0	1585
Q Serve(g_s), s	0.7	28.2	28.2	4.8	27.5	2.2	0.2	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.7	28.2	28.2	4.8	27.5	2.2	16.5	0.0	0.0	16.4	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.60		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	81	1079	1135	84	2163	1008	114	0		273	0	233
V/C Ratio(X)	0.14	0.65	0.65	0.93	0.64	0.08	0.18	0.00		0.65	0.00	0.07
Avail Cap(c_a), veh/h	81	1079	1135	97	2163	1008	309	0		453	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	14.0	14.0	52.2	13.8	7.7	40.7	0.0	0.0	45.6	0.0	40.4
Incr Delay (d2), s/veh	0.8	3.0	2.9	65.0	1.5	0.2	0.7	0.0	0.0	2.6	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	0.3	11.5	12.0	3.7	10.7	0.8	0.5	0.0	0.0	4.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	17.1	16.9	117.3	15.3	7.8	41.4	0.0	0.0	48.2	0.0	40.6
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1450			1544			20			194	
Approach Delay, s/veh		17.2			20.0			41.4			47.6	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	74.7		23.1	12.0	74.9		23.1				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	7.8	31.2		18.4	3.7	30.5		18.5				
Green Ext Time (p_c), s	0.0	11.6		0.8	0.0	12.6		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			20.6
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1117	69	20	1043	23	101	23	15	117	15	263
Future Volume (veh/h)	209	1117	69	20	1043	23	101	23	15	117	15	263
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	1214	75	22	1134	25	110	25	16	127	16	286
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	234	1705	105	74	2444	54	53	32	20	294	37	293
Arrive On Green	0.07	0.50	0.53	0.04	0.48	0.50	0.05	0.03	0.03	0.21	0.18	0.18
Sat Flow, veh/h	3456	3400	210	1781	5141	113	1781	1066	682	1590	200	1585
Grp Volume(v), veh/h	227	634	655	22	751	408	110	0	41	143	0	286
Grp Sat Flow(s),veh/h/ln	1728	1777	1833	1781	1702	1850	1781	0	1748	1791	0	1585
Q Serve(g_s), s	7.9	33.2	33.2	1.4	17.8	17.8	3.6	0.0	2.8	8.3	0.0	21.5
Cycle Q Clear(g_c), s	7.9	33.2	33.2	1.4	17.8	17.8	3.6	0.0	2.8	8.3	0.0	21.5
Prop In Lane	1.00		0.11	1.00		0.06	1.00		0.39	0.89		1.00
Lane Grp Cap(c), veh/h	234	891	919	74	1618	880	53	0	52	331	0	293
V/C Ratio(X)	0.97	0.71	0.71	0.30	0.46	0.46	2.08	0.00	0.79	0.43	0.00	0.98
Avail Cap(c_a), veh/h	346	891	919	104	1618	880	386	0	379	370	0	328
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	55.8	23.2	23.0	55.8	21.2	21.1	56.7	0.0	57.9	42.1	0.0	48.7
Incr Delay (d2), s/veh	32.9	4.8	4.7	2.2	1.0	1.8	501.8	0.0	23.0	0.9	0.0	41.7
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	4.5	14.7	15.1	0.7	7.2	8.1	8.9	0.0	1.6	3.7	0.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	28.0	27.7	58.0	22.1	22.9	558.5	0.0	80.8	43.0	0.0	90.4
LnGrp LOS	F	C	C	E	C	C	F	A	F	D	A	F
Approach Vol, veh/h		1516			1181			151			429	
Approach Delay, s/veh		37.0			23.1			428.8			74.6	
Approach LOS		D			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	68.1		29.4	15.1	65.0		10.5				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0				
Max Green Setting (Gmax), s	10.0	36.1		* 28	15.0	31.1		29.0				
Max Q Clear Time (g_c+I1), s	14.4	36.2		24.5	10.9	20.8		5.8				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.3	5.4		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	619	32	655	620	119	32	211	596	111	113	77
Future Volume (veh/h)	134	619	32	655	620	119	32	211	596	111	113	77
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	146	673	35	712	674	129	35	229	648	121	123	84
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	1213	541	866	1483	284	54	337	683	157	456	387
Arrive On Green	0.10	0.34	0.34	0.25	0.50	0.50	0.03	0.18	0.18	0.09	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	3456	2976	569	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	146	673	35	712	402	401	35	229	648	121	123	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1768	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.2	21.5	1.8	27.2	20.5	20.6	2.7	16.0	20.0	9.3	7.5	5.9
Cycle Q Clear(g_c), s	11.2	21.5	1.8	27.2	20.5	20.6	2.7	16.0	20.0	9.3	7.5	5.9
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1213	541	866	886	881	54	337	683	157	456	387
V/C Ratio(X)	0.82	0.55	0.06	0.82	0.45	0.45	0.64	0.68	0.95	0.77	0.27	0.22
Avail Cap(c_a), veh/h	178	1213	541	889	886	881	153	389	727	216	456	387
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	61.8	37.5	22.8	49.5	22.8	22.8	67.1	53.6	38.4	62.5	42.8	42.3
Incr Delay (d2), s/veh	25.1	1.8	0.2	6.1	1.7	1.7	12.1	3.9	21.2	10.9	0.3	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	6.4	9.7	0.8	12.5	9.1	9.0	1.4	7.9	9.7	4.7	3.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.9	39.3	23.1	55.6	24.4	24.5	79.2	57.5	59.5	73.4	43.1	42.5
LnGrp LOS	F	D	C	E	C	C	E	E	E	E	D	D
Approach Vol, veh/h		854			1515			912			328	
Approach Delay, s/veh		46.8			39.1			59.8			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	40.0	52.7	8.3	39.0	18.0	74.7	17.2	30.1
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	30.2	24.5	5.7	10.5	14.2	23.5	12.3	23.0
Green Ext Time (p_c), s	1.5	4.3	0.0	0.9	0.0	6.0	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	586	25	32	490	23	13	3	28	0	30	16
Future Volume (veh/h)	8	586	25	32	490	23	13	3	28	0	30	16
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	9	637	27	35	533	25	14	3	30	0	33	17
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	1342	56	755	1345	63	113	13	61	0	85	44
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.00	0.07	0.07
Sat Flow, veh/h	6	1769	74	772	1772	83	287	181	825	0	1163	599
Grp Volume(v), veh/h	673	0	0	35	0	558	47	0	0	0	0	50
Grp Sat Flow(s),veh/h/ln	1849	0	0	772	0	1855	1292	0	0	0	0	1762
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.3	0.7	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	6.9	0.0	0.0	0.5	0.0	5.3	2.1	0.0	0.0	0.0	0.0	1.4
Prop In Lane	0.01		0.04	1.00		0.04	0.30		0.64	0.00		0.34
Lane Grp Cap(c), veh/h	1476	0	0	755	0	1408	187	0	0	0	0	129
V/C Ratio(X)	0.46	0.00	0.00	0.05	0.00	0.40	0.25	0.00	0.00	0.00	0.00	0.39
Avail Cap(c_a), veh/h	1476	0	0	755	0	1408	766	0	0	0	0	799
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	2.3	0.0	0.0	1.5	0.0	2.1	22.7	0.0	0.0	0.0	0.0	22.4
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	0.8	0.7	0.0	0.0	0.0	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	1.0	0.0	0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.3	0.0	0.0	1.6	0.0	2.9	23.4	0.0	0.0	0.0	0.0	24.3
LnGrp LOS	A	A	A	A	A	A	C	A	A	A	A	C
Approach Vol, veh/h		673			593			47			50	
Approach Delay, s/veh		3.3			2.9			23.4			24.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	43.0	7.7	43.0	7.7
Change Period (Y+Rc), s	4.5	4.0	4.5	4.0
Max Green Setting (Gmax), s	38.5	23.0	38.5	23.0
Max Q Clear Time (g_c+I1), s	8.9	4.1	7.3	3.4
Green Ext Time (p_c), s	5.3	0.2	4.4	0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	13.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	509	578	117	129	28
Future Vol, veh/h	47	509	578	117	129	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	51	553	628	127	140	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	755	0	-	0	1347	692
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	855	-	-	-	167	444
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	855	-	-	-	153	444
Mov Cap-2 Maneuver	-	-	-	-	153	-
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	517	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.8		0		118.9	
HCM LOS					F	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	855	-	-	-	173
HCM Lane V/C Ratio	0.06	-	-	-	0.986
HCM Control Delay (s)	9.5	0	-	-	118.9
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	7.9

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	374	28	123	354	3	38	10	83	8	12	14
Future Vol, veh/h	13	374	28	123	354	3	38	10	83	8	12	14
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	-	-	-	-	-	-	-	-	-	-	-	-
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	14	407	30	134	385	3	41	11	90	9	13	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	388	0	0	437	0	0	1119	1106	422	1156	1120	387
Stage 1	-	-	-	-	-	-	450	450	-	655	655	-
Stage 2	-	-	-	-	-	-	669	656	-	501	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1170	-	-	1123	-	-	184	210	632	174	206	661
Stage 1	-	-	-	-	-	-	589	572	-	455	463	-
Stage 2	-	-	-	-	-	-	447	462	-	552	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1170	-	-	1123	-	-	148	175	632	124	172	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	175	-	124	172	-
Stage 1	-	-	-	-	-	-	580	563	-	448	393	-
Stage 2	-	-	-	-	-	-	358	392	-	457	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.2	28.2	24.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	1170	-	-	1123	-	-	219
HCM Lane V/C Ratio	0.484	0.012	-	-	0.119	-	-	0.169
HCM Control Delay (s)	28.2	8.1	0	-	8.6	0	-	24.7
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.5	0	-	-	0.4	-	-	0.6

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	390	79	15	380	28	49
Future Vol, veh/h	390	79	15	380	28	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	424	86	16	413	30	53
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	15.5	13.7	9.6
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	4%
Vol Thru, %	0%	83%	96%
Vol Right, %	64%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	469	395
LT Vol	28	0	15
Through Vol	0	390	380
RT Vol	49	79	0
Lane Flow Rate	84	510	429
Geometry Grp	1	1	1
Degree of Util (X)	0.131	0.643	0.562
Departure Headway (Hd)	5.632	4.539	4.715
Convergence, Y/N	Yes	Yes	Yes
Cap	630	790	760
Service Time	3.726	2.59	2.771
HCM Lane V/C Ratio	0.133	0.646	0.564
HCM Control Delay	9.6	15.5	13.7
HCM Lane LOS	A	C	B
HCM 95th-tile Q	0.4	4.8	3.5

Intersection	
Intersection Delay, s/veh	28.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	89	16	72	0	173	0	418	157	154	100	0
Future Vol, veh/h	140	89	16	72	0	173	0	418	157	154	100	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	152	97	17	78	0	188	0	454	171	167	109	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	20.3	18.4	39.3	20.7
HCM LOS	C	C	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	57%	29%	61%
Vol Thru, %	100%	0%	36%	0%	39%
Vol Right, %	0%	100%	7%	71%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	418	157	245	245	254
LT Vol	0	0	140	72	154
Through Vol	418	0	89	0	100
RT Vol	0	157	16	173	0
Lane Flow Rate	454	171	266	266	276
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.917	0.312	0.566	0.536	0.582
Departure Headway (Hd)	7.262	6.592	7.648	7.252	7.585
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	500	549	471	495	475
Service Time	5.011	4.292	5.705	5.311	5.643
HCM Lane V/C Ratio	0.908	0.311	0.565	0.537	0.581
HCM Control Delay	49.4	12.3	20.3	18.4	20.7
HCM Lane LOS	E	B	C	C	C
HCM 95th-tile Q	10.7	1.3	3.4	3.1	3.6

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	256	115	50	8	71	0	0	110	26
Future Vol, veh/h	0	0	0	256	115	50	8	71	0	0	110	26
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	278	125	54	9	77	0	0	120	28
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.3	9	9.4
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	70%	81%
Vol Right, %	0%	0%	30%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	256	165	136
LT Vol	8	256	0	0
Through Vol	71	0	115	110
RT Vol	0	0	50	26
Lane Flow Rate	86	278	179	148
Geometry Grp	2	7	7	2
Degree of Util (X)	0.125	0.434	0.244	0.206
Departure Headway (Hd)	5.243	5.616	4.901	5.026
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	681	640	730	713
Service Time	3.294	3.369	2.653	3.069
HCM Lane V/C Ratio	0.126	0.434	0.245	0.208
HCM Control Delay	9	12.6	9.2	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2.2	1	0.8

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	614	8	83	661	67	0	0	32	47	0	54
Future Vol, veh/h	46	614	8	83	661	67	0	0	32	47	0	54
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	50	667	9	90	718	73	0	0	35	51	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	791	0	0	676	0	0	1311	1743	338	1369	1711	396
Stage 1	-	-	-	-	-	-	772	772	-	935	935	-
Stage 2	-	-	-	-	-	-	539	971	-	434	776	-
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	825	-	-	911	-	-	116	86	658	105	90	603
Stage 1	-	-	-	-	-	-	358	407	-	285	342	-
Stage 2	-	-	-	-	-	-	494	329	-	570	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	825	-	-	911	-	-	84	64	658	80	67	603
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	153	-	177	158	-
Stage 1	-	-	-	-	-	-	323	368	-	257	281	-
Stage 2	-	-	-	-	-	-	366	270	-	488	367	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.5	10.8	25.4
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	658	825	-	-	911	-	-	284
HCM Lane V/C Ratio	0.053	0.061	-	-	0.099	-	-	0.387
HCM Control Delay (s)	10.8	9.6	0.4	-	9.4	0.7	-	25.4
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.3	-	-	1.8

Intersection	
Intersection Delay, s/veh	90
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	613	79	200	603	56	71	64	158	62	88	47
Future Vol, veh/h	65	613	79	200	603	56	71	64	158	62	88	47
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	666	86	217	655	61	77	70	172	67	96	51
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	121.5	94.2	28	42.4
HCM LOS	F	F	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	53%	0%	100%	0%	0%	100%	0%	0%	31%
Vol Thru, %	47%	0%	0%	100%	72%	0%	100%	78%	45%
Vol Right, %	0%	100%	0%	0%	28%	0%	0%	22%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	135	158	65	409	283	200	402	257	197
LT Vol	71	0	65	0	0	200	0	0	62
Through Vol	64	0	0	409	204	0	402	201	88
RT Vol	0	158	0	0	79	0	0	56	47
Lane Flow Rate	147	172	71	444	308	217	437	279	214
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.495	0.534	0.215	1.292	0.879	0.644	1.232	0.776	0.717
Departure Headway (Hd)	13.153	12.146	11.502	10.974	10.768	11.226	10.698	10.537	12.834
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	276	299	314	333	339	324	345	346	283
Service Time	10.853	9.846	9.202	8.674	8.468	8.926	8.398	8.237	10.534
HCM Lane V/C Ratio	0.533	0.575	0.226	1.333	0.909	0.67	1.267	0.806	0.756
HCM Control Delay	28.1	27.9	17.3	182.8	57	32.2	158.6	41.7	42.4
HCM Lane LOS	D	D	C	F	F	D	F	E	E
HCM 95th-tile Q	2.6	2.9	0.8	19.9	8.3	4.2	18.3	6.3	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	0	829	39	118	826	19	24	1	96	10	3	15
Future Vol, veh/h	0	829	39	118	826	19	24	1	96	10	3	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	0	901	42	128	898	21	26	1	104	11	3	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	943	0	0	1629	2097	472	1616	2108	460
Stage 1	-	-	-	-	-	-	922	922	-	1165	1165	-
Stage 2	-	-	-	-	-	-	707	1175	-	451	943	-
Critical Hdwy	-	-	-	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	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	723	-	-	67	51	538	69	51	548
Stage 1	0	-	-	-	-	-	291	347	-	206	267	-
Stage 2	0	-	-	-	-	-	392	264	-	557	339	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	723	-	-	46	32	538	40	32	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	116	-	132	100	-
Stage 1	-	-	-	-	-	-	291	347	-	206	170	-
Stage 2	-	-	-	-	-	-	238	168	-	448	339	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.7	13.3	25
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	-	-	723	-	-	210
HCM Lane V/C Ratio	0.194	-	-	0.177	-	-	0.145
HCM Control Delay (s)	13.3	-	-	11.1	1.6	-	25
HCM Lane LOS	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	-	-	0.6	-	-	0.5

Intersection	
Int Delay, s/veh	12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	847	14	174	941	7	26	0	202	0	0	12
Future Vol, veh/h	59	847	14	174	941	7	26	0	202	0	0	12
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	64	921	15	189	1023	8	28	0	220	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1031	0	0	936	0	0	1947	2466	468	1994	2469	516
Stage 1	-	-	-	-	-	-	1057	1057	-	1405	1405	-
Stage 2	-	-	-	-	-	-	890	1409	-	589	1064	-
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	670	-	-	727	-	-	39	30	542	36	30	504
Stage 1	-	-	-	-	-	-	240	300	-	147	204	-
Stage 2	-	-	-	-	-	-	304	203	-	461	298	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	670	-	-	727	-	-	~ 17	9	542	10	9	504
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	14	-	28	40	-
Stage 1	-	-	-	-	-	-	192	240	-	118	80	-
Stage 2	-	-	-	-	-	-	116	79	-	219	238	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	4	98.9	12.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	249	670	-	-	727	-	-	504
HCM Lane V/C Ratio	0.995	0.096	-	-	0.26	-	-	0.026
HCM Control Delay (s)	98.9	10.9	1	-	11.7	2.6	-	12.3
HCM Lane LOS	F	B	A	-	B	A	-	B
HCM 95th %tile Q(veh)	9.6	0.3	-	-	1	-	-	0.1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	478	359	470	286	657	245
Future Volume (veh/h)	478	359	470	286	657	245
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	520	390	511	311	714	0
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	603	1713	869	388	1355	
Arrive On Green	0.17	0.48	0.24	0.24	0.39	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	520	390	511	311	714	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	10.4	4.6	9.1	13.2	11.3	0.0
Cycle Q Clear(g_c), s	10.4	4.6	9.1	13.2	11.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	603	1713	869	388	1355	
V/C Ratio(X)	0.86	0.23	0.59	0.80	0.53	
Avail Cap(c_a), veh/h	605	1891	1045	466	1355	
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	0.00
Uniform Delay (d), s/veh	28.7	10.8	23.8	25.4	16.6	0.0
Incr Delay (d2), s/veh	12.2	0.1	0.6	8.2	1.5	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	5.2	1.6	3.7	5.6	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	10.8	24.4	33.6	18.1	0.0
LnGrp LOS	D	B	C	C	B	
Approach Vol, veh/h		910	822		714	
Approach Delay, s/veh		28.0	27.9		18.1	
Approach LOS		C	C		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				38.9		32.5	17.0	22.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				6.6		13.3	12.4	15.2
Green Ext Time (p_c), s				2.8		2.5	0.0	2.3

Intersection Summary		
HCM 6th Ctrl Delay		25.1
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	172	42	43	212	83	106	570	52	211	813	54
Future Volume (veh/h)	139	172	42	43	212	83	106	570	52	211	813	54
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	151	187	46	47	230	90	115	620	57	229	884	59
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	206	383	94	127	281	110	147	838	77	275	1105	74
Arrive On Green	0.12	0.26	0.26	0.07	0.22	0.22	0.08	0.25	0.25	0.15	0.33	0.33
Sat Flow, veh/h	1781	1450	357	1781	1280	501	1781	3291	302	1781	3381	226
Grp Volume(v), veh/h	151	0	233	47	0	320	115	334	343	229	465	478
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1781	0	1780	1781	1777	1816	1781	1777	1830
Q Serve(g_s), s	5.8	0.0	7.7	1.8	0.0	12.0	4.5	12.2	12.2	8.8	16.8	16.8
Cycle Q Clear(g_c), s	5.8	0.0	7.7	1.8	0.0	12.0	4.5	12.2	12.2	8.8	16.8	16.8
Prop In Lane	1.00		0.20	1.00		0.28	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	206	0	477	127	0	391	147	453	463	275	581	598
V/C Ratio(X)	0.73	0.00	0.49	0.37	0.00	0.82	0.78	0.74	0.74	0.83	0.80	0.80
Avail Cap(c_a), veh/h	658	0	667	633	0	632	200	558	570	362	720	741
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	30.1	0.0	21.9	31.2	0.0	26.1	31.7	24.1	24.1	28.9	21.6	21.6
Incr Delay (d2), s/veh	5.0	0.0	0.8	1.8	0.0	4.4	13.0	4.0	4.0	11.9	5.2	5.1
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	2.7	0.0	3.2	0.8	0.0	5.3	2.4	5.3	5.4	4.5	7.3	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	22.7	33.0	0.0	30.6	44.7	28.1	28.1	40.8	26.8	26.7
LnGrp LOS	D	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		384			367			792			1172	
Approach Delay, s/veh		27.6			30.9			30.5			29.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	22.4	9.5	23.1	10.3	27.5	12.6	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.3	22.1	25.0	26.0	7.9	28.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	10.8	14.2	3.8	9.7	6.5	18.8	7.8	14.0
Green Ext Time (p_c), s	0.2	2.6	0.1	1.2	0.0	4.2	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1361	2	70	1111	99	10	13	69	96	8	12
Future Volume (veh/h)	11	1361	2	70	1111	99	10	13	69	96	8	12
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	12	1479	2	76	1208	108	11	14	0	104	9	13
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	2361	3	83	2308	1073	59	50		166	9	168
Arrive On Green	0.05	0.65	0.68	0.05	0.65	0.68	0.13	0.11	0.00	0.13	0.11	0.11
Sat Flow, veh/h	1781	3641	5	1781	3554	1585	116	468	1585	973	84	1585
Grp Volume(v), veh/h	12	722	759	76	1208	108	25	0	0	113	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	584	0	1585	1058	0	1585
Q Serve(g_s), s	0.7	26.5	26.5	4.7	19.9	2.6	0.1	0.0	0.0	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.7	26.5	26.5	4.7	19.9	2.6	12.4	0.0	0.0	12.3	0.0	0.8
Prop In Lane	1.00		0.00	1.00		1.00	0.44		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	81	1152	1212	83	2308	1073	125	0		204	0	168
V/C Ratio(X)	0.15	0.63	0.63	0.92	0.52	0.10	0.20	0.00		0.55	0.00	0.08
Avail Cap(c_a), veh/h	81	1152	1212	97	2308	1073	396	0		442	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	11.5	11.5	52.2	10.2	6.2	44.3	0.0	0.0	48.1	0.0	44.3
Incr Delay (d2), s/veh	0.8	2.6	2.5	60.4	0.9	0.2	0.8	0.0	0.0	2.3	0.0	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	0.3	10.4	10.9	3.5	7.4	0.9	0.6	0.0	0.0	3.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	14.0	13.9	112.6	11.1	6.4	45.1	0.0	0.0	50.4	0.0	44.5
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1493			1392			25			126	
Approach Delay, s/veh		14.3			16.3			45.1			49.8	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.1	79.2		18.7	12.0	79.3		18.7
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0
Max Q Clear Time (g_c+I1), s	7.7	29.5		14.3	3.7	22.9		14.4
Green Ext Time (p_c), s	0.0	12.5		0.5	0.0	11.9		0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1148	74	22	930	17	114	28	5	80	12	186
Future Volume (veh/h)	190	1148	74	22	930	17	114	28	5	80	12	186
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	207	1248	80	24	1011	18	124	30	5	87	13	202
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	219	1922	123	69	2800	50	67	59	10	207	31	211
Arrive On Green	0.06	0.57	0.59	0.04	0.54	0.57	0.06	0.04	0.04	0.16	0.13	0.13
Sat Flow, veh/h	3456	3391	217	1781	5166	92	1781	1563	260	1559	233	1585
Grp Volume(v), veh/h	207	653	675	24	666	363	124	0	35	100	0	202
Grp Sat Flow(s),veh/h/ln	1728	1777	1831	1781	1702	1854	1781	0	1823	1792	0	1585
Q Serve(g_s), s	7.8	32.7	32.8	1.7	14.5	14.5	4.9	0.0	2.4	6.6	0.0	16.5
Cycle Q Clear(g_c), s	7.8	32.7	32.8	1.7	14.5	14.5	4.9	0.0	2.4	6.6	0.0	16.5
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.14	0.87		1.00
Lane Grp Cap(c), veh/h	219	1007	1038	69	1845	1005	67	0	69	238	0	211
V/C Ratio(X)	0.95	0.65	0.65	0.35	0.36	0.36	1.84	0.00	0.51	0.42	0.00	0.96
Avail Cap(c_a), veh/h	478	1007	1038	96	1845	1005	329	0	337	356	0	315
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	60.7	19.3	19.2	60.9	16.9	16.9	61.0	0.0	61.4	50.5	0.0	56.0
Incr Delay (d2), s/veh	18.1	3.2	3.2	3.0	0.5	1.0	390.5	0.0	5.7	1.2	0.0	31.8
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	4.0	14.1	14.5	0.8	5.8	6.4	9.5	0.0	1.2	3.0	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.7	22.5	22.3	63.9	17.5	17.9	451.6	0.0	67.0	51.7	0.0	87.8
LnGrp LOS	E	C	C	E	B	B	F	A	E	D	A	F
Approach Vol, veh/h		1535			1053			159			302	
Approach Delay, s/veh		30.0			18.7			366.9			75.8	
Approach LOS		C			B			F			E	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	12.0	81.7	24.5	15.2	78.5	11.8
Change Period (Y+Rc), s	4.0	4.9	* 4.2	4.0	4.9	4.0
Max Green Setting (Gmax), s	10.0	47.1	* 29	21.0	36.1	27.0
Max Q Clear Time (g_c+I1), s	4.7	35.7	19.5	10.8	17.5	6.9
Green Ext Time (p_c), s	0.0	6.7	0.8	0.5	6.8	0.8

Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	636	31	583	579	99	38	234	611	112	100	71
Future Volume (veh/h)	141	636	31	583	579	99	38	234	611	112	100	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	153	691	34	634	629	108	41	254	664	122	109	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	178	1181	527	866	1485	255	63	353	696	158	464	393
Arrive On Green	0.10	0.33	0.33	0.25	0.49	0.49	0.04	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3456	3034	520	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	153	691	34	634	368	369	41	254	664	122	109	77
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1777	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.8	22.6	1.7	23.6	18.7	18.7	3.2	17.9	21.5	9.4	6.5	5.4
Cycle Q Clear(g_c), s	11.8	22.6	1.7	23.6	18.7	18.7	3.2	17.9	21.5	9.4	6.5	5.4
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1181	527	866	870	870	63	353	696	158	464	393
V/C Ratio(X)	0.86	0.59	0.06	0.73	0.42	0.42	0.65	0.72	0.95	0.77	0.23	0.20
Avail Cap(c_a), veh/h	178	1181	527	889	870	870	153	389	727	216	464	393
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	62.0	38.7	23.1	48.1	23.0	23.0	66.7	53.3	37.9	62.4	42.0	41.6
Incr Delay (d2), s/veh	31.9	2.1	0.2	3.0	1.5	1.5	10.8	5.7	22.3	11.2	0.3	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	7.0	10.2	0.8	10.6	8.2	8.3	1.6	9.0	10.5	4.8	3.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.9	40.9	23.4	51.2	24.5	24.5	77.5	59.1	60.1	73.6	42.3	41.8
LnGrp LOS	F	D	C	D	C	C	E	E	E	E	D	D
Approach Vol, veh/h		878			1371			959			308	
Approach Delay, s/veh		49.4			36.9			60.6			54.6	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	51.4	8.9	39.6	18.0	73.4	17.3	31.3
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	26.6	25.6	6.2	9.5	14.8	21.7	12.4	24.5
Green Ext Time (p_c), s	1.8	4.2	0.0	0.8	0.0	5.4	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	502	31	16	509	31	10	2	10	14	12	16
Future Volume (veh/h)	10	502	31	16	509	31	10	2	10	14	12	16
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	11	546	34	17	553	34	11	2	11	15	13	17
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	1325	81	829	1340	82	145	14	46	127	32	38
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	10	1724	106	834	1744	107	650	230	745	499	517	616
Grp Volume(v), veh/h	591	0	0	17	0	587	24	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1839	0	0	834	0	1851	1625	0	0	1632	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.4	0.0	0.0	0.2	0.0	5.4	0.6	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.02		0.06	1.00		0.06	0.46		0.46	0.33		0.38
Lane Grp Cap(c), veh/h	1487	0	0	829	0	1423	205	0	0	196	0	0
V/C Ratio(X)	0.40	0.00	0.00	0.02	0.00	0.41	0.12	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1487	0	0	829	0	1423	802	0	0	827	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.0	0.0	0.0	1.4	0.0	2.0	22.4	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.6	0.0	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	0.6	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.8	0.0	0.0	1.4	0.0	2.8	22.6	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		591			604			24			45	
Approach Delay, s/veh		2.8			2.8			22.6			23.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		7.1		43.0		7.1
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0
Max Q Clear Time (g_c+I1), s		7.4		2.6		7.4		3.3
Green Ext Time (p_c), s		4.5		0.1		4.5		0.1

Intersection Summary	
HCM 6th Ctrl Delay	3.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	13.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	540	552	108	129	30
Future Vol, veh/h	44	540	552	108	129	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	-	-	-	-	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	48	587	600	117	140	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	717	0	-	0	1342	659
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	683	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	884	-	-	-	168	464
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	884	-	-	-	154	464
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	502	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	116.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	884	-	-	-	176
HCM Lane V/C Ratio	0.054	-	-	-	0.982
HCM Control Delay (s)	9.3	0	-	-	116.6
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	7.9

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	11	392	34	90	359	5	23	10	106	7	3	11
Future Vol, veh/h	11	392	34	90	359	5	23	10	106	7	3	11
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	-	-	-	-	-	-	-	-	-	-	-	-
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	12	426	37	98	390	5	25	11	115	8	3	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	463	0	0	1065	1060	445	1121	1076	393
Stage 1	-	-	-	-	-	-	469	469	-	589	589	-
Stage 2	-	-	-	-	-	-	596	591	-	532	487	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1164	-	-	1098	-	-	200	224	613	183	219	656
Stage 1	-	-	-	-	-	-	575	561	-	494	495	-
Stage 2	-	-	-	-	-	-	490	494	-	531	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	1098	-	-	175	196	613	129	191	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	196	-	129	191	-
Stage 1	-	-	-	-	-	-	567	553	-	487	439	-
Stage 2	-	-	-	-	-	-	423	438	-	417	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	19.9	21.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	1164	-	-	1098	-	-	242
HCM Lane V/C Ratio	0.386	0.01	-	-	0.089	-	-	0.094
HCM Control Delay (s)	19.9	8.1	0	-	8.6	0	-	21.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.8	0	-	-	0.3	-	-	0.3

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	352	44	38	375	51	91
Future Vol, veh/h	352	44	38	375	51	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	383	48	41	408	55	99
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	14.4	15.4	10.5
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	9%
Vol Thru, %	0%	89%	91%
Vol Right, %	64%	11%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	142	396	413
LT Vol	51	0	38
Through Vol	0	352	375
RT Vol	91	44	0
Lane Flow Rate	154	430	449
Geometry Grp	1	1	1
Degree of Util (X)	0.244	0.576	0.608
Departure Headway (Hd)	5.689	4.819	4.875
Convergence, Y/N	Yes	Yes	Yes
Cap	634	740	732
Service Time	3.689	2.918	2.974
HCM Lane V/C Ratio	0.243	0.581	0.613
HCM Control Delay	10.5	14.4	15.4
HCM Lane LOS	B	B	C
HCM 95th-tile Q	1	3.7	4.2

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↑	↱		↰↑	
Traffic Vol, veh/h	40	46	9	61	0	184	0	320	178	162	232	0
Future Vol, veh/h	40	46	9	61	0	184	0	320	178	162	232	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	50	10	66	0	200	0	348	193	176	252	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	12.5	15.3	17	25.7
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	42%	25%	41%
Vol Thru, %	100%	0%	48%	0%	59%
Vol Right, %	0%	100%	9%	75%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	178	95	245	394
LT Vol	0	0	40	61	162
Through Vol	320	0	46	0	232
RT Vol	0	178	9	184	0
Lane Flow Rate	348	193	103	266	428
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.635	0.315	0.212	0.477	0.748
Departure Headway (Hd)	6.571	5.857	7.408	6.447	6.286
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	550	613	483	559	574
Service Time	4.318	3.603	5.474	4.494	4.331
HCM Lane V/C Ratio	0.633	0.315	0.213	0.476	0.746
HCM Control Delay	20.1	11.3	12.5	15.3	25.7
HCM Lane LOS	C	B	B	C	D
HCM 95th-tile Q	4.4	1.3	0.8	2.6	6.5

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	245	125	60	2	61	0	0	73	45
Future Vol, veh/h	0	0	0	245	125	60	2	61	0	0	73	45
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	266	136	65	2	66	0	0	79	49
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	10.8	8.8	8.9
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	100%	0%	0%
Vol Thru, %	97%	0%	68%	62%
Vol Right, %	0%	0%	32%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	245	185	118
LT Vol	2	245	0	0
Through Vol	61	0	125	73
RT Vol	0	0	60	45
Lane Flow Rate	68	266	201	128
Geometry Grp	2	7	7	2
Degree of Util (X)	0.099	0.408	0.268	0.174
Departure Headway (Hd)	5.193	5.519	4.789	4.881
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	652	748	735
Service Time	3.234	3.26	2.53	2.915
HCM Lane V/C Ratio	0.099	0.408	0.269	0.174
HCM Control Delay	8.8	12	9.3	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2	1.1	0.6

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	552	13	79	576	77	6	1	45	31	0	34
Future Vol, veh/h	31	552	13	79	576	77	6	1	45	31	0	34
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	34	600	14	86	626	84	7	1	49	34	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	710	0	0	614	0	0	1160	1557	307	1209	1522	355
Stage 1	-	-	-	-	-	-	675	675	-	840	840	-
Stage 2	-	-	-	-	-	-	485	882	-	369	682	-
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	885	-	-	961	-	-	151	112	689	139	117	641
Stage 1	-	-	-	-	-	-	410	451	-	326	379	-
Stage 2	-	-	-	-	-	-	532	362	-	623	448	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	885	-	-	961	-	-	120	90	689	109	94	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	191	-	215	193	-
Stage 1	-	-	-	-	-	-	386	425	-	307	322	-
Stage 2	-	-	-	-	-	-	426	308	-	544	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1.4	12.5	18.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	539	885	-	-	961	-	-	330
HCM Lane V/C Ratio	0.105	0.038	-	-	0.089	-	-	0.214
HCM Control Delay (s)	12.5	9.2	0.2	-	9.1	0.5	-	18.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.3	-	-	0.8

Intersection	
Intersection Delay, s/veh	76.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	559	74	233	613	55	65	59	154	58	90	38
Future Vol, veh/h	43	559	74	233	613	55	65	59	154	58	90	38
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	608	80	253	666	60	71	64	167	63	98	41
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	91.4	88.5	25.9	37.4
HCM LOS	F	F	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	52%	0%	100%	0%	0%	100%	0%	0%	31%
Vol Thru, %	48%	0%	0%	100%	72%	0%	100%	79%	48%
Vol Right, %	0%	100%	0%	0%	28%	0%	0%	21%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	154	43	373	260	233	409	259	186
LT Vol	65	0	43	0	0	233	0	0	58
Through Vol	59	0	0	373	186	0	409	204	90
RT Vol	0	154	0	0	74	0	0	55	38
Lane Flow Rate	135	167	47	405	283	253	444	282	202
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.449	0.513	0.141	1.161	0.795	0.727	1.212	0.758	0.67
Departure Headway (Hd)	12.802	11.798	11.317	10.791	10.582	10.768	10.242	10.086	12.552
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	283	308	319	340	345	339	360	361	289
Service Time	10.502	9.498	9.017	8.491	8.282	8.468	7.942	7.786	10.252
HCM Lane V/C Ratio	0.477	0.542	0.147	1.191	0.82	0.746	1.233	0.781	0.699
HCM Control Delay	25.5	26.3	15.9	133.1	44.1	37.5	149.3	38.4	37.4
HCM Lane LOS	D	D	C	F	E	E	F	E	E
HCM 95th-tile Q	2.2	2.8	0.5	15.9	6.6	5.4	18.1	6	4.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	722	51	165	854	21	24	1	93	3	5	15
Future Vol, veh/h	1	722	51	165	854	21	24	1	93	3	5	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	785	55	179	928	23	26	1	101	3	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	951	0	0	840	0	0	1640	2124	420	1693	2140	476
Stage 1	-	-	-	-	-	-	815	815	-	1298	1298	-
Stage 2	-	-	-	-	-	-	825	1309	-	395	842	-
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	718	-	-	791	-	-	66	49	582	60	48	535
Stage 1	-	-	-	-	-	-	338	389	-	171	230	-
Stage 2	-	-	-	-	-	-	333	227	-	602	378	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	718	-	-	791	-	-	38	25	582	30	25	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	90	-	113	78	-
Stage 1	-	-	-	-	-	-	337	388	-	170	119	-
Stage 2	-	-	-	-	-	-	160	118	-	495	377	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.3	12.5	26.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	718	-	-	791	-	-	194
HCM Lane V/C Ratio	0.174	0.002	-	-	0.227	-	-	0.129
HCM Control Delay (s)	12.5	10	-	-	10.9	1.9	-	26.3
HCM Lane LOS	B	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0.9	-	-	0.4

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	852	2	171	876	10	17	0	138	8	1	9
Future Vol, veh/h	54	852	2	171	876	10	17	0	138	8	1	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	59	926	2	186	952	11	18	0	150	9	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	963	0	0	928	0	0	1894	2380	464	1911	2376	482
Stage 1	-	-	-	-	-	-	1045	1045	-	1330	1330	-
Stage 2	-	-	-	-	-	-	849	1335	-	581	1046	-
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	711	-	-	733	-	-	43	34	545	41	34	530
Stage 1	-	-	-	-	-	-	245	304	-	163	222	-
Stage 2	-	-	-	-	-	-	322	221	-	467	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	733	-	-	21	13	545	15	13	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	74	39	-	74	53	-
Stage 1	-	-	-	-	-	-	203	252	-	135	101	-
Stage 2	-	-	-	-	-	-	142	100	-	281	252	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	3.8	28	39.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	711	-	-	733	-	-	125
HCM Lane V/C Ratio	0.525	0.083	-	-	0.254	-	-	0.157
HCM Control Delay (s)	28	10.5	0.8	-	11.6	2.3	-	39.1
HCM Lane LOS	D	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	2.9	0.3	-	-	1	-	-	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	418	418	587	419	452	430
Future Volume (veh/h)	418	418	587	419	452	430
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	454	454	638	455	491	0
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	544	1781	1006	449	1305	
Arrive On Green	0.16	0.50	0.28	0.28	0.38	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	454	454	638	455	491	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.5	5.4	11.6	21.0	7.6	0.0
Cycle Q Clear(g_c), s	9.5	5.4	11.6	21.0	7.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	544	1781	1006	449	1305	
V/C Ratio(X)	0.84	0.25	0.63	1.01	0.38	
Avail Cap(c_a), veh/h	582	1821	1006	449	1305	
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	0.00
Uniform Delay (d), s/veh	30.3	10.6	23.2	26.6	16.7	0.0
Incr Delay (d2), s/veh	9.7	0.1	1.3	46.0	0.8	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	4.5	1.9	4.8	13.2	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.0	10.7	24.5	72.6	17.6	0.0
LnGrp LOS	D	B	C	F	B	
Approach Vol, veh/h		908	1093		491	
Approach Delay, s/veh		25.3	44.5		17.6	
Approach LOS		C	D		B	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	41.7	32.5	16.2	25.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	38.0	28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s	7.4	9.6	11.5	23.0
Green Ext Time (p_c), s	3.3	1.7	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	37	66	120	61	85	148	717	28	120	610	153
Future Volume (veh/h)	122	37	66	120	61	85	148	717	28	120	610	153
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	133	40	72	130	66	92	161	779	30	130	663	166
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	205	85	154	202	100	139	186	1081	42	166	841	210
Arrive On Green	0.11	0.14	0.14	0.11	0.14	0.14	0.10	0.31	0.31	0.09	0.30	0.30
Sat Flow, veh/h	1781	599	1078	1781	707	986	1781	3489	134	1781	2816	704
Grp Volume(v), veh/h	133	0	112	130	0	158	161	397	412	130	418	411
Grp Sat Flow(s),veh/h/ln	1781	0	1676	1781	0	1693	1781	1777	1846	1781	1777	1744
Q Serve(g_s), s	3.8	0.0	3.2	3.7	0.0	4.7	4.7	10.5	10.5	3.8	11.4	11.4
Cycle Q Clear(g_c), s	3.8	0.0	3.2	3.7	0.0	4.7	4.7	10.5	10.5	3.8	11.4	11.4
Prop In Lane	1.00		0.64	1.00		0.58	1.00		0.07	1.00		0.40
Lane Grp Cap(c), veh/h	205	0	239	202	0	239	186	550	572	166	530	520
V/C Ratio(X)	0.65	0.00	0.47	0.64	0.00	0.66	0.87	0.72	0.72	0.78	0.79	0.79
Avail Cap(c_a), veh/h	878	0	827	845	0	803	186	640	665	169	623	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	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	22.3	0.0	20.8	22.4	0.0	21.5	23.3	16.2	16.2	23.4	17.0	17.0
Incr Delay (d2), s/veh	3.5	0.0	1.4	3.4	0.0	3.1	32.3	3.3	3.2	20.8	5.8	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	1.6	0.0	1.3	1.6	0.0	1.9	3.5	4.2	4.3	2.4	4.9	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	0.0	22.2	25.8	0.0	24.6	55.6	19.5	19.4	44.2	22.7	22.9
LnGrp LOS	C	A	C	C	A	C	E	B	B	D	C	C
Approach Vol, veh/h		245			288			970			959	
Approach Delay, s/veh		24.1			25.1			25.4			25.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	20.8	10.5	12.0	10.0	20.2	10.6	11.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	25.0	26.0	5.5	18.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	5.8	12.5	5.7	5.2	6.7	13.4	5.8	6.7
Green Ext Time (p_c), s	0.0	2.7	0.3	0.5	0.0	2.3	0.3	0.8

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1195	1	56	1354	133	5	21	129	165	7	18
Future Volume (veh/h)	15	1195	1	56	1354	133	5	21	129	165	7	18
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	16	1299	1	61	1472	145	5	23	0	179	8	20
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	1772	1	75	1715	808	39	137		172	5	432
Arrive On Green	0.05	0.49	0.51	0.04	0.48	0.51	0.30	0.27	0.00	0.30	0.27	0.27
Sat Flow, veh/h	1781	3644	3	1781	3554	1585	0	501	1585	396	18	1585
Grp Volume(v), veh/h	16	633	667	61	1472	145	28	0	0	187	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1870	1781	1777	1585	501	0	1585	414	0	1585
Q Serve(g_s), s	1.0	31.3	31.3	3.7	40.2	5.4	0.0	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.0	31.3	31.3	3.7	40.2	5.4	33.0	0.0	0.0	33.0	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.18		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	81	864	909	75	1715	808	189	0		188	0	432
V/C Ratio(X)	0.20	0.73	0.73	0.82	0.86	0.18	0.15	0.00		0.99	0.00	0.05
Avail Cap(c_a), veh/h	81	864	909	97	1715	808	189	0		188	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	22.6	22.6	52.3	25.1	14.5	31.8	0.0	0.0	45.2	0.0	29.5
Incr Delay (d2), s/veh	1.2	5.5	5.2	32.4	5.8	0.5	0.4	0.0	0.0	63.7	0.0	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	0.5	13.9	14.6	2.3	17.6	2.0	0.5	0.0	0.0	8.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	28.0	27.8	84.7	30.9	15.0	32.1	0.0	0.0	108.8	0.0	29.5
LnGrp LOS	D	C	C	F	C	B	C	A		F	A	C
Approach Vol, veh/h		1316			1678			28			207	
Approach Delay, s/veh		28.2			31.5			32.1			101.2	
Approach LOS		C			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	61.4		37.0	12.0	61.0		37.0
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0
Max Q Clear Time (g_c+I1), s	6.7	34.3		35.0	4.0	43.2		35.0
Green Ext Time (p_c), s	0.0	9.4		0.0	0.0	8.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1131	40	6	1110	11	167	30	9	52	18	239
Future Volume (veh/h)	179	1131	40	6	1110	11	167	30	9	52	18	239
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	195	1229	43	7	1207	12	182	33	10	57	20	260
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	204	1742	61	64	2472	25	164	127	38	221	78	263
Arrive On Green	0.06	0.50	0.52	0.04	0.47	0.50	0.11	0.09	0.09	0.19	0.17	0.17
Sat Flow, veh/h	3456	3503	122	1781	5213	52	1781	1378	417	1335	468	1585
Grp Volume(v), veh/h	195	623	649	7	788	431	182	0	43	77	0	260
Grp Sat Flow(s),veh/h/ln	1728	1777	1848	1781	1702	1861	1781	0	1795	1804	0	1585
Q Serve(g_s), s	7.9	38.0	38.0	0.5	22.2	22.2	12.9	0.0	3.1	5.1	0.0	22.9
Cycle Q Clear(g_c), s	7.9	38.0	38.0	0.5	22.2	22.2	12.9	0.0	3.1	5.1	0.0	22.9
Prop In Lane	1.00		0.07	1.00		0.03	1.00		0.23	0.74		1.00
Lane Grp Cap(c), veh/h	204	884	919	64	1614	883	164	0	165	299	0	263
V/C Ratio(X)	0.96	0.70	0.71	0.11	0.49	0.49	1.11	0.00	0.26	0.26	0.00	0.99
Avail Cap(c_a), veh/h	395	884	919	89	1614	883	303	0	305	319	0	281
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	65.7	27.2	27.2	65.3	25.2	25.1	62.1	0.0	59.1	49.9	0.0	58.3
Incr Delay (d2), s/veh	20.7	4.7	4.5	0.8	1.1	1.9	76.9	0.0	0.8	0.5	0.0	49.9
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	4.1	17.1	17.8	0.3	9.2	10.3	9.2	0.0	1.5	2.4	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.4	31.9	31.7	66.1	26.2	27.1	139.0	0.0	60.0	50.4	0.0	108.2
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1467			1226			225			337	
Approach Delay, s/veh		39.1			26.8			123.9			94.9	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	77.6		30.4	15.2	74.3		20.0
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2
Max Green Setting (Gmax), s	10.0	58.1		* 28	19.0	49.1		26.8
Max Q Clear Time (g_c+I1), s	13.5	41.0		25.9	10.9	25.2		14.9
Green Ext Time (p_c), s	0.0	8.3		0.3	0.4	9.2		0.9

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	667	66	692	718	103	51	134	592	78	107	83
Future Volume (veh/h)	86	667	66	692	718	103	51	134	592	78	107	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	93	725	72	752	780	112	55	146	643	85	116	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	127	1309	584	831	1697	244	82	346	674	118	396	336
Arrive On Green	0.07	0.37	0.37	0.24	0.54	0.54	0.05	0.18	0.18	0.07	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	3456	3119	448	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	93	725	72	752	444	448	55	146	643	85	116	90
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1790	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.2	22.7	3.5	29.6	21.3	21.3	4.3	9.7	21.2	6.5	7.3	6.6
Cycle Q Clear(g_c), s	7.2	22.7	3.5	29.6	21.3	21.3	4.3	9.7	21.2	6.5	7.3	6.6
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	1309	584	831	967	974	82	346	674	118	396	336
V/C Ratio(X)	0.73	0.55	0.12	0.90	0.46	0.46	0.67	0.42	0.95	0.72	0.29	0.27
Avail Cap(c_a), veh/h	178	1309	584	889	967	974	153	389	711	216	456	386
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	63.7	35.1	20.0	51.6	19.4	19.4	65.7	50.4	38.9	64.1	46.4	46.1
Incr Delay (d2), s/veh	9.2	1.7	0.4	12.2	1.6	1.6	9.2	0.8	22.5	7.9	0.4	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	3.6	10.2	1.7	14.2	9.2	9.3	2.2	4.6	10.4	3.2	3.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	36.8	20.4	63.8	21.0	21.0	74.9	51.3	61.4	72.0	46.8	46.5
LnGrp LOS	E	D	C	E	C	C	E	D	E	E	D	D
Approach Vol, veh/h		890			1644			844			291	
Approach Delay, s/veh		39.2			40.5			60.5			54.1	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.6	56.5	10.4	34.5	13.9	81.1	14.2	30.8
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	31.6	25.7	7.3	10.3	10.2	24.3	9.5	24.2
Green Ext Time (p_c), s	1.1	4.6	0.0	0.9	0.1	6.9	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	560	28	36	614	38	21	2	18	22	6	13
Future Volume (veh/h)	6	560	28	36	614	38	21	2	18	22	6	13
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	7	609	30	39	667	41	23	2	20	24	7	14
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	75	1337	65	776	1327	82	159	11	50	164	24	36
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	5	1757	86	790	1744	107	727	157	707	773	336	501
Grp Volume(v), veh/h	646	0	0	39	0	708	45	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1848	0	0	790	0	1851	1592	0	0	1609	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.5	0.0	7.5	1.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.06	0.51		0.44	0.53		0.31
Lane Grp Cap(c), veh/h	1478	0	0	776	0	1409	220	0	0	223	0	0
V/C Ratio(X)	0.44	0.00	0.00	0.05	0.00	0.50	0.20	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	1478	0	0	776	0	1409	792	0	0	802	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	1.5	0.0	2.3	22.4	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	1.3	0.5	0.0	0.0	0.4	0.0	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	0.9	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.2	0.0	0.0	1.6	0.0	3.6	22.9	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		646			747			45			45	
Approach Delay, s/veh		3.2			3.5			22.9			22.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		7.6		43.0		7.6
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0
Max Q Clear Time (g_c+I1), s		8.5		3.2		9.5		3.2
Green Ext Time (p_c), s		5.0		0.1		6.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.5
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	13					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	531	547	106	150	19
Future Vol, veh/h	19	531	547	106	150	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	21	577	595	115	163	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	710	0	-	0	1272	653
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	619	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	889	-	-	-	185	467
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	889	-	-	-	179	467
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	104.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	889	-	-	-	192
HCM Lane V/C Ratio	0.023	-	-	-	0.957
HCM Control Delay (s)	9.1	0	-	-	104.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	7.8

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	391	22	99	385	2	22	7	98	4	6	6
Future Vol, veh/h	9	391	22	99	385	2	22	7	98	4	6	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	10	425	24	108	418	2	24	8	107	4	7	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	420	0	0	449	0	0	1099	1093	437	1150	1104	419
Stage 1	-	-	-	-	-	-	457	457	-	635	635	-
Stage 2	-	-	-	-	-	-	642	636	-	515	469	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1139	-	-	1111	-	-	190	214	620	175	211	634
Stage 1	-	-	-	-	-	-	583	568	-	467	472	-
Stage 2	-	-	-	-	-	-	463	472	-	543	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1139	-	-	1111	-	-	164	185	620	126	182	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	185	-	126	182	-
Stage 1	-	-	-	-	-	-	576	561	-	461	412	-
Stage 2	-	-	-	-	-	-	394	412	-	438	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	19.5	23.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	385	1139	-	-	1111	-	-	216
HCM Lane V/C Ratio	0.359	0.009	-	-	0.097	-	-	0.081
HCM Control Delay (s)	19.5	8.2	0	-	8.6	0	-	23.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.6	0	-	-	0.3	-	-	0.3

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	31	27	378	45	95
Future Vol, veh/h	308	31	27	378	45	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	335	34	29	411	49	103
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.5	14.5	10.1
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	32%	0%	7%
Vol Thru, %	0%	91%	93%
Vol Right, %	68%	9%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	140	339	405
LT Vol	45	0	27
Through Vol	0	308	378
RT Vol	95	31	0
Lane Flow Rate	152	368	440
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.491	0.585
Departure Headway (Hd)	5.491	4.795	4.78
Convergence, Y/N	Yes	Yes	Yes
Cap	657	744	748
Service Time	3.491	2.881	2.863
HCM Lane V/C Ratio	0.231	0.495	0.588
HCM Control Delay	10.1	12.5	14.5
HCM Lane LOS	B	B	B
HCM 95th-tile Q	0.9	2.7	3.8

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	6	2	218	0	59	0	98	317	110	136	0
Future Vol, veh/h	3	6	2	218	0	59	0	98	317	110	136	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	7	2	237	0	64	0	107	345	120	148	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.5	14	12.1	12.8
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	27%	79%	45%
Vol Thru, %	100%	0%	55%	0%	55%
Vol Right, %	0%	100%	18%	21%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	317	11	277	246
LT Vol	0	0	3	218	110
Through Vol	98	0	6	0	136
RT Vol	0	317	2	59	0
Lane Flow Rate	107	345	12	301	267
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.173	0.493	0.021	0.48	0.422
Departure Headway (Hd)	5.86	5.15	6.327	5.741	5.681
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	611	699	564	626	634
Service Time	3.599	2.889	4.391	3.779	3.722
HCM Lane V/C Ratio	0.175	0.494	0.021	0.481	0.421
HCM Control Delay	9.8	12.8	9.5	14	12.8
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.6	2.7	0.1	2.6	2.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	165	103	46	6	51	0	0	68	7
Future Vol, veh/h	0	0	0	165	103	46	6	51	0	0	68	7
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	179	112	50	7	55	0	0	74	8
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.4	8.3	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	11%	100%	0%	0%
Vol Thru, %	89%	0%	69%	91%
Vol Right, %	0%	0%	31%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	165	149	75
LT Vol	6	165	0	0
Through Vol	51	0	103	68
RT Vol	0	0	46	7
Lane Flow Rate	62	179	162	82
Geometry Grp	2	7	7	2
Degree of Util (X)	0.084	0.268	0.21	0.108
Departure Headway (Hd)	4.865	5.383	4.665	4.765
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	737	669	771	753
Service Time	2.887	3.106	2.388	2.785
HCM Lane V/C Ratio	0.084	0.268	0.21	0.109
HCM Control Delay	8.3	10.1	8.6	8.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	1.1	0.8	0.4

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	54	539	9	81	523	77	11	1	31	18	1	61
Future Vol, veh/h	54	539	9	81	523	77	11	1	31	18	1	61
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	59	586	10	88	568	84	12	1	34	20	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	652	0	0	596	0	0	1170	1537	298	1198	1500	326
Stage 1	-	-	-	-	-	-	709	709	-	786	786	-
Stage 2	-	-	-	-	-	-	461	828	-	412	714	-
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	930	-	-	976	-	-	148	115	698	141	121	670
Stage 1	-	-	-	-	-	-	391	435	-	351	401	-
Stage 2	-	-	-	-	-	-	550	384	-	588	433	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	930	-	-	976	-	-	110	89	698	111	94	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	185	-	214	190	-
Stage 1	-	-	-	-	-	-	354	394	-	318	344	-
Stage 2	-	-	-	-	-	-	423	329	-	505	392	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.5	14.5	15.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	930	-	-	976	-	-	443
HCM Lane V/C Ratio	0.11	0.063	-	-	0.09	-	-	0.196
HCM Control Delay (s)	14.5	9.1	0.4	-	9.1	0.5	-	15.1
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.3	-	-	0.7

Intersection	
Intersection Delay, s/veh	63
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	504	72	204	484	43	78	140	183	57	94	57
Future Vol, veh/h	57	504	72	204	484	43	78	140	183	57	94	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	548	78	222	526	47	85	152	199	62	102	62
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	85.3	60.9	40.3	46.7
HCM LOS	F	F	E	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	0%	100%	0%	0%	100%	0%	0%	27%
Vol Thru, %	64%	0%	0%	100%	70%	0%	100%	79%	45%
Vol Right, %	0%	100%	0%	0%	30%	0%	0%	21%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	218	183	57	336	240	204	323	204	208
LT Vol	78	0	57	0	0	204	0	0	57
Through Vol	140	0	0	336	168	0	323	161	94
RT Vol	0	183	0	0	72	0	0	43	57
Lane Flow Rate	237	199	62	365	261	222	351	222	226
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.783	0.609	0.2	1.13	0.792	0.687	1.038	0.648	0.765
Departure Headway (Hd)	12.424	11.504	11.95	11.419	11.196	11.641	11.11	10.953	12.544
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	294	316	302	321	326	313	330	331	289
Service Time	10.124	9.204	9.65	9.119	8.896	9.341	8.81	8.653	10.244
HCM Lane V/C Ratio	0.806	0.63	0.205	1.137	0.801	0.709	1.064	0.671	0.782
HCM Control Delay	48.5	30.6	17.6	125	45.7	36.4	94.9	31.7	46.7
HCM Lane LOS	E	D	C	F	E	E	F	D	E
HCM 95th-tile Q	6.1	3.8	0.7	14.4	6.4	4.7	12	4.3	5.8

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	743	15	95	715	10	20	0	80	3	0	2
Future Vol, veh/h	1	743	15	95	715	10	20	0	80	3	0	2
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	808	16	103	777	11	22	0	87	3	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	788	0	0	824	0	0	1413	-	412	1395	1815	394
Stage 1	-	-	-	-	-	-	818	-	-	989	989	-
Stage 2	-	-	-	-	-	-	595	-	-	406	826	-
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	827	-	-	802	-	-	98	0	589	101	77	605
Stage 1	-	-	-	-	-	-	336	0	-	265	323	-
Stage 2	-	-	-	-	-	-	458	0	-	593	385	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	827	-	-	802	-	-	80	-	589	71	59	605
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	-	-	176	147	-
Stage 1	-	-	-	-	-	-	335	-	-	264	249	-
Stage 2	-	-	-	-	-	-	352	-	-	504	384	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	12.2	20
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	827	-	-	802	-	-	246
HCM Lane V/C Ratio	0.148	0.001	-	-	0.129	-	-	0.022
HCM Control Delay (s)	12.2	9.4	-	-	10.2	0.9	-	20
HCM Lane LOS	B	A	-	-	B	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	738	9	118	694	0	30	1	334	1	0	2
Future Vol, veh/h	25	738	9	118	694	0	30	1	334	1	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	802	10	128	754	0	33	1	363	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	754	0	0	812	0	0	1494	1871	406	1466	1876	377
Stage 1	-	-	-	-	-	-	861	861	-	1010	1010	-
Stage 2	-	-	-	-	-	-	633	1010	-	456	866	-
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	852	-	-	810	-	-	85	71	594	89	71	621
Stage 1	-	-	-	-	-	-	317	371	-	257	316	-
Stage 2	-	-	-	-	-	-	434	316	-	554	369	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	852	-	-	810	-	-	64	49	594	26	49	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	171	-	68	158	-
Stage 1	-	-	-	-	-	-	299	349	-	242	230	-
Stage 2	-	-	-	-	-	-	315	230	-	202	348	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.3	32.4	27
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	852	-	-	810	-	-	167
HCM Lane V/C Ratio	0.776	0.032	-	-	0.158	-	-	0.02
HCM Control Delay (s)	32.4	9.4	0.3	-	10.3	1	-	27
HCM Lane LOS	D	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	7	0.1	-	-	0.6	-	-	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	519	683	531	401	449	288
Future Volume (veh/h)	519	683	531	401	449	288
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	564	742	577	436	488	0
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	659	2084	1227	547	1082	
Arrive On Green	0.19	0.59	0.35	0.35	0.31	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	564	742	577	436	488	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	14.1	9.8	11.4	22.2	10.1	0.0
Cycle Q Clear(g_c), s	14.1	9.8	11.4	22.2	10.1	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	659	2084	1227	547	1082	
V/C Ratio(X)	0.86	0.36	0.47	0.80	0.45	
Avail Cap(c_a), veh/h	792	4291	3298	1471	1082	
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	0.00
Uniform Delay (d), s/veh	35.0	9.7	22.9	26.5	24.6	0.0
Incr Delay (d2), s/veh	7.9	0.1	0.3	2.7	1.4	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	6.5	3.5	4.7	8.5	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.9	9.8	23.2	29.2	25.9	0.0
LnGrp LOS	D	A	C	C	C	
Approach Vol, veh/h		1306	1013		488	
Approach Delay, s/veh		24.1	25.7		25.9	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	56.9	32.5	21.6	35.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	108.0	28.0	20.5	83.0
Max Q Clear Time (g_c+I1), s	11.8	12.1	16.1	24.2
Green Ext Time (p_c), s	6.3	1.6	1.0	6.7

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	82	46	101	70	141	36	535	118	167	805	20
Future Volume (veh/h)	114	82	46	101	70	141	36	535	118	167	805	20
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	89	50	110	76	153	39	582	128	182	875	22
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	195	222	125	181	105	212	73	772	169	168	1132	28
Arrive On Green	0.11	0.20	0.20	0.10	0.19	0.19	0.04	0.27	0.27	0.09	0.32	0.32
Sat Flow, veh/h	1781	1125	632	1781	554	1115	1781	2897	635	1781	3542	89
Grp Volume(v), veh/h	124	0	139	110	0	229	39	356	354	182	439	458
Grp Sat Flow(s),veh/h/ln	1781	0	1757	1781	0	1670	1781	1777	1756	1781	1777	1854
Q Serve(g_s), s	3.5	0.0	3.7	3.1	0.0	6.8	1.1	9.7	9.8	5.0	11.8	11.8
Cycle Q Clear(g_c), s	3.5	0.0	3.7	3.1	0.0	6.8	1.1	9.7	9.8	5.0	11.8	11.8
Prop In Lane	1.00		0.36	1.00		0.67	1.00		0.36	1.00		0.05
Lane Grp Cap(c), veh/h	195	0	347	181	0	317	73	474	468	168	568	593
V/C Ratio(X)	0.64	0.00	0.40	0.61	0.00	0.72	0.53	0.75	0.76	1.08	0.77	0.77
Avail Cap(c_a), veh/h	875	0	862	841	0	820	168	604	597	168	604	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	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	22.6	0.0	18.5	22.8	0.0	20.1	24.9	17.8	17.8	24.0	16.3	16.3
Incr Delay (d2), s/veh	3.4	0.0	0.7	3.3	0.0	3.1	5.8	4.0	4.1	93.0	5.8	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	1.5	0.0	1.4	1.4	0.0	2.7	0.6	4.0	4.0	6.3	5.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	0.0	19.3	26.1	0.0	23.3	30.7	21.8	22.0	117.0	22.1	21.9
LnGrp LOS	C	A	B	C	A	C	C	C	C	F	C	C
Approach Vol, veh/h		263			339			749			1079	
Approach Delay, s/veh		22.4			24.2			22.4			38.0	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	18.6	9.9	15.0	6.7	21.4	10.3	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	25.0	26.0	5.0	18.0	26.0	26.0
Max Q Clear Time (g_c+I1), s	7.0	11.8	5.1	5.7	3.1	13.8	5.5	8.8
Green Ext Time (p_c), s	0.0	2.3	0.2	0.7	0.0	2.1	0.3	1.2

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1335	2	72	1295	75	11	7	109	154	10	15
Future Volume (veh/h)	10	1335	2	72	1295	75	11	7	109	154	10	15
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	11	1451	2	78	1408	82	12	8	0	167	11	16
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	2211	3	84	2163	1008	72	32		229	11	233
Arrive On Green	0.05	0.61	0.63	0.05	0.61	0.64	0.17	0.15	0.00	0.17	0.15	0.15
Sat Flow, veh/h	1781	3641	5	1781	3554	1585	135	220	1585	1129	74	1585
Grp Volume(v), veh/h	11	708	745	78	1408	82	20	0	0	178	0	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	356	0	1585	1203	0	1585
Q Serve(g_s), s	0.7	28.6	28.6	4.8	28.2	2.2	0.2	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.7	28.6	28.6	4.8	28.2	2.2	16.5	0.0	0.0	16.4	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.60		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	81	1079	1135	84	2163	1008	114	0		273	0	233
V/C Ratio(X)	0.14	0.66	0.66	0.93	0.65	0.08	0.18	0.00		0.65	0.00	0.07
Avail Cap(c_a), veh/h	81	1079	1135	97	2163	1008	309	0		453	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	14.1	14.1	52.2	13.9	7.7	40.7	0.0	0.0	45.6	0.0	40.4
Incr Delay (d2), s/veh	0.8	3.1	3.0	65.0	1.5	0.2	0.7	0.0	0.0	2.6	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	0.3	11.7	12.2	3.7	11.0	0.8	0.5	0.0	0.0	4.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	17.2	17.1	117.3	15.5	7.8	41.4	0.0	0.0	48.2	0.0	40.6
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1464			1568			20			194	
Approach Delay, s/veh		17.4			20.1			41.4			47.6	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	74.7		23.1	12.0	74.9		23.1				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	7.8	31.6		18.4	3.7	31.2		18.5				
Green Ext Time (p_c), s	0.0	11.6		0.8	0.0	12.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1131	93	20	1064	23	119	23	15	117	15	263
Future Volume (veh/h)	209	1131	93	20	1064	23	119	23	15	117	15	263
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	1229	101	22	1157	25	129	25	16	127	16	286
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	234	1599	131	74	2338	51	90	54	34	294	37	293
Arrive On Green	0.07	0.48	0.51	0.04	0.45	0.48	0.08	0.05	0.05	0.21	0.18	0.18
Sat Flow, veh/h	3456	3325	273	1781	5143	111	1781	1066	682	1590	200	1585
Grp Volume(v), veh/h	227	656	674	22	766	416	129	0	41	143	0	286
Grp Sat Flow(s),veh/h/ln	1728	1777	1821	1781	1702	1850	1781	0	1748	1791	0	1585
Q Serve(g_s), s	7.9	36.4	36.5	1.4	19.0	19.0	6.0	0.0	2.7	8.3	0.0	21.5
Cycle Q Clear(g_c), s	7.9	36.4	36.5	1.4	19.0	19.0	6.0	0.0	2.7	8.3	0.0	21.5
Prop In Lane	1.00		0.15	1.00		0.06	1.00		0.39	0.89		1.00
Lane Grp Cap(c), veh/h	234	854	876	74	1548	841	90	0	88	331	0	293
V/C Ratio(X)	0.97	0.77	0.77	0.30	0.49	0.49	1.44	0.00	0.47	0.43	0.00	0.98
Avail Cap(c_a), veh/h	346	854	876	104	1548	841	386	0	379	370	0	328
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	55.8	25.6	25.5	55.8	23.0	23.0	55.5	0.0	55.4	42.1	0.0	48.7
Incr Delay (d2), s/veh	32.9	6.5	6.5	2.2	1.1	2.1	210.0	0.0	3.8	0.9	0.0	41.7
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	4.5	16.6	17.0	0.7	7.8	8.7	7.9	0.0	1.3	3.7	0.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	32.2	32.0	58.0	24.2	25.0	265.4	0.0	59.2	43.0	0.0	90.4
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1557			1204			170			429	
Approach Delay, s/veh		40.3			25.1			215.7			74.6	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	65.7		29.4	15.1	62.5		13.0
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0
Max Green Setting (Gmax), s	10.0	36.1		* 28	15.0	31.1		29.0
Max Q Clear Time (g_c+I1), s	4.4	39.4		24.5	10.9	22.0		8.0
Green Ext Time (p_c), s	0.0	0.0		0.6	0.3	5.0		0.9

Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	632	36	679	632	120	36	214	619	113	117	78
Future Volume (veh/h)	134	632	36	679	632	120	36	214	619	113	117	78
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	146	687	39	738	687	130	39	233	673	123	127	85
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	1164	519	866	1446	273	60	360	703	159	476	403
Arrive On Green	0.10	0.33	0.33	0.25	0.48	0.48	0.03	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3456	2982	564	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	146	687	39	738	409	408	39	233	673	123	127	85
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1769	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.2	22.6	2.0	28.5	21.6	21.6	3.0	16.1	22.4	9.5	7.6	5.9
Cycle Q Clear(g_c), s	11.2	22.6	2.0	28.5	21.6	21.6	3.0	16.1	22.4	9.5	7.6	5.9
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1164	519	866	861	857	60	360	703	159	476	403
V/C Ratio(X)	0.82	0.59	0.08	0.85	0.47	0.48	0.65	0.65	0.96	0.78	0.27	0.21
Avail Cap(c_a), veh/h	178	1164	519	889	861	857	153	389	727	216	476	403
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	61.8	39.2	23.7	50.0	24.1	24.2	66.8	52.1	37.7	62.4	41.8	41.1
Incr Delay (d2), s/veh	25.1	2.2	0.3	7.8	1.9	1.9	11.2	3.3	23.1	11.4	0.3	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	6.4	10.3	1.0	13.3	9.6	9.5	1.6	7.9	11.0	4.8	3.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.9	41.4	24.0	57.8	26.0	26.0	78.0	55.4	60.8	73.8	42.1	41.4
LnGrp LOS	F	D	C	E	C	C	E	E	E	E	D	D
Approach Vol, veh/h		872			1555			945			335	
Approach Delay, s/veh		48.3			41.1			60.2			53.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	50.8	8.7	40.5	18.0	72.8	17.4	31.9
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	31.5	25.6	6.0	10.6	14.2	24.6	12.5	25.4
Green Ext Time (p_c), s	1.3	4.2	0.0	0.9	0.0	6.1	0.1	1.6

Intersection Summary		
HCM 6th Ctrl Delay		48.8
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	604	25	32	505	23	13	3	28	0	30	16
Future Volume (veh/h)	8	604	25	32	505	23	13	3	28	0	30	16
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	9	657	27	35	549	25	14	3	30	0	33	17
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	1345	55	742	1347	61	113	13	61	0	85	44
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.00	0.07	0.07
Sat Flow, veh/h	6	1771	72	757	1775	81	287	181	825	0	1163	599
Grp Volume(v), veh/h	693	0	0	35	0	574	47	0	0	0	0	50
Grp Sat Flow(s),veh/h/ln	1850	0	0	757	0	1856	1292	0	0	0	0	1762
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.5	0.7	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	7.3	0.0	0.0	0.5	0.0	5.5	2.1	0.0	0.0	0.0	0.0	1.4
Prop In Lane	0.01		0.04	1.00		0.04	0.30		0.64	0.00		0.34
Lane Grp Cap(c), veh/h	1476	0	0	742	0	1409	187	0	0	0	0	129
V/C Ratio(X)	0.47	0.00	0.00	0.05	0.00	0.41	0.25	0.00	0.00	0.00	0.00	0.39
Avail Cap(c_a), veh/h	1476	0	0	742	0	1409	766	0	0	0	0	799
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	1.5	0.0	2.1	22.7	0.0	0.0	0.0	0.0	22.4
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.0	0.9	0.7	0.0	0.0	0.0	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	1.0	0.0	0.0	0.0	0.0	0.8	0.5	0.0	0.0	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.0	0.0	1.7	0.0	3.0	23.4	0.0	0.0	0.0	0.0	24.3
LnGrp LOS	A	A	A	A	A	A	C	A	A	A	A	C
Approach Vol, veh/h		693			609			47			50	
Approach Delay, s/veh		3.4			2.9			23.4			24.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		7.7		43.0		7.7
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0
Max Q Clear Time (g_c+I1), s		9.3		4.1		7.5		3.4
Green Ext Time (p_c), s		5.5		0.2		4.6		0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	14.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	519	589	117	129	28
Future Vol, veh/h	47	519	589	117	129	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	51	564	640	127	140	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	767	0	-	0	1370	704
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	666	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	847	-	-	-	161	437
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	511	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	847	-	-	-	147	437
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	511	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	131.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	847	-	-	-	167
HCM Lane V/C Ratio	0.06	-	-	-	1.022
HCM Control Delay (s)	9.5	0	-	-	131.2
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	8.2

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	382	35	126	360	3	42	10	87	8	12	14
Future Vol, veh/h	13	382	35	126	360	3	42	10	87	8	12	14
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	-	-	-	-	-	-	-	-	-	-	-	-
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	14	415	38	137	391	3	46	11	95	9	13	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	394	0	0	453	0	0	1143	1130	434	1182	1148	393
Stage 1	-	-	-	-	-	-	462	462	-	667	667	-
Stage 2	-	-	-	-	-	-	681	668	-	515	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1165	-	-	1108	-	-	177	204	622	167	199	656
Stage 1	-	-	-	-	-	-	580	565	-	448	457	-
Stage 2	-	-	-	-	-	-	440	456	-	543	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1165	-	-	1108	-	-	141	169	622	117	165	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	169	-	117	165	-
Stage 1	-	-	-	-	-	-	571	556	-	441	385	-
Stage 2	-	-	-	-	-	-	350	384	-	444	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.2	32	25.9
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1165	-	-	1108	-	-	209
HCM Lane V/C Ratio	0.54	0.012	-	-	0.124	-	-	0.177
HCM Control Delay (s)	32	8.1	0	-	8.7	0	-	25.9
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	3	0	-	-	0.4	-	-	0.6

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	403	80	17	389	28	50
Future Vol, veh/h	403	80	17	389	28	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	87	18	423	30	54
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	16.3	14.2	9.7
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	4%
Vol Thru, %	0%	83%	96%
Vol Right, %	64%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	78	483	406
LT Vol	28	0	17
Through Vol	0	403	389
RT Vol	50	80	0
Lane Flow Rate	85	525	441
Geometry Grp	1	1	1
Degree of Util (X)	0.136	0.665	0.581
Departure Headway (Hd)	5.785	4.562	4.741
Convergence, Y/N	Yes	Yes	Yes
Cap	623	788	755
Service Time	3.785	2.62	2.803
HCM Lane V/C Ratio	0.136	0.666	0.584
HCM Control Delay	9.7	16.3	14.2
HCM Lane LOS	A	C	B
HCM 95th-tile Q	0.5	5.1	3.8

Intersection	
Intersection Delay, s/veh	29.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	89	16	81	0	176	0	419	170	156	100	0
Future Vol, veh/h	140	89	16	81	0	176	0	419	170	156	100	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	152	97	17	88	0	191	0	455	185	170	109	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	20.9	19.8	41.2	21.6
HCM LOS	C	C	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	57%	32%	61%
Vol Thru, %	100%	0%	36%	0%	39%
Vol Right, %	0%	100%	7%	68%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	419	170	245	257	256
LT Vol	0	0	140	81	156
Through Vol	419	0	89	0	100
RT Vol	0	170	16	176	0
Lane Flow Rate	455	185	266	279	278
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.932	0.341	0.575	0.57	0.596
Departure Headway (Hd)	7.364	6.645	7.767	7.34	7.706
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	492	540	463	492	467
Service Time	5.12	4.4	5.83	5.402	5.772
HCM Lane V/C Ratio	0.925	0.343	0.575	0.567	0.595
HCM Control Delay	52.7	12.8	20.9	19.8	21.6
HCM Lane LOS	F	B	C	C	C
HCM 95th-tile Q	11.1	1.5	3.5	3.5	3.8

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	264	115	55	8	76	0	0	118	26
Future Vol, veh/h	0	0	0	264	115	55	8	76	0	0	118	26
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	287	125	60	9	83	0	0	128	28
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.6	9.2	9.6
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	68%	82%
Vol Right, %	0%	0%	32%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	264	170	144
LT Vol	8	264	0	0
Through Vol	76	0	115	118
RT Vol	0	0	55	26
Lane Flow Rate	91	287	185	157
Geometry Grp	2	7	7	2
Degree of Util (X)	0.134	0.451	0.253	0.221
Departure Headway (Hd)	5.289	5.656	4.926	5.073
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	675	634	724	706
Service Time	3.346	3.413	2.683	3.121
HCM Lane V/C Ratio	0.135	0.453	0.256	0.222
HCM Control Delay	9.2	13	9.4	9.6
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	2.3	1	0.8

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	645	8	83	694	67	0	0	32	47	0	54
Future Vol, veh/h	46	645	8	83	694	67	0	0	32	47	0	54
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	50	701	9	90	754	73	0	0	35	51	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	827	0	0	710	0	0	1363	1813	355	1422	1781	414
Stage 1	-	-	-	-	-	-	806	806	-	971	971	-
Stage 2	-	-	-	-	-	-	557	1007	-	451	810	-
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	800	-	-	885	-	-	107	78	641	96	81	587
Stage 1	-	-	-	-	-	-	342	393	-	271	329	-
Stage 2	-	-	-	-	-	-	482	317	-	557	391	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	800	-	-	885	-	-	76	57	641	72	59	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	142	-	166	147	-
Stage 1	-	-	-	-	-	-	307	353	-	243	266	-
Stage 2	-	-	-	-	-	-	351	256	-	473	351	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.5	10.9	27.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	641	800	-	-	885	-	-	269
HCM Lane V/C Ratio	0.054	0.063	-	-	0.102	-	-	0.408
HCM Control Delay (s)	10.9	9.8	0.4	-	9.5	0.7	-	27.3
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.3	-	-	1.9

Intersection	
Intersection Delay, s/veh	110.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	634	80	209	620	60	77	73	165	65	95	56
Future Vol, veh/h	75	634	80	209	620	60	77	73	165	65	95	56
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	689	87	227	674	65	84	79	179	71	103	61
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	150.2	115.7	32.5	54.6
HCM LOS	F	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	51%	0%	100%	0%	0%	100%	0%	0%	30%
Vol Thru, %	49%	0%	0%	100%	73%	0%	100%	77%	44%
Vol Right, %	0%	100%	0%	0%	27%	0%	0%	23%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	165	75	423	291	209	413	267	216
LT Vol	77	0	75	0	0	209	0	0	65
Through Vol	73	0	0	423	211	0	413	207	95
RT Vol	0	165	0	0	80	0	0	60	56
Lane Flow Rate	163	179	82	459	317	227	449	290	235
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.568	0.577	0.259	1.397	0.946	0.701	1.323	0.841	0.807
Departure Headway (Hd)	13.835	12.832	12.099	11.569	11.366	11.779	11.249	11.082	13.325
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	262	283	298	317	323	309	328	330	275
Service Time	11.535	10.532	9.799	9.269	9.066	9.479	8.949	8.782	11.025
HCM Lane V/C Ratio	0.622	0.633	0.275	1.448	0.981	0.735	1.369	0.879	0.855
HCM Control Delay	33.3	31.7	19	227.1	72.5	38	196.1	52	54.6
HCM Lane LOS	D	D	C	F	F	E	F	F	F
HCM 95th-tile Q	3.2	3.3	1	22.6	9.6	4.9	20.6	7.4	6.4

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	0	860	39	118	856	19	24	1	96	10	3	15
Future Vol, veh/h	0	860	39	118	856	19	24	1	96	10	3	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	0	935	42	128	930	21	26	1	104	11	3	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	977	0	0	1679	2163	489	1665	2174	476
Stage 1	-	-	-	-	-	-	956	956	-	1197	1197	-
Stage 2	-	-	-	-	-	-	723	1207	-	468	977	-
Critical Hdwy	-	-	-	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	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	702	-	-	62	47	525	63	46	535
Stage 1	0	-	-	-	-	-	277	335	-	197	257	-
Stage 2	0	-	-	-	-	-	384	254	-	545	327	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	702	-	-	41	29	525	35	28	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	108	-	125	93	-
Stage 1	-	-	-	-	-	-	277	335	-	197	157	-
Stage 2	-	-	-	-	-	-	223	155	-	435	327	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.8	13.6	26.2
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	525	-	-	702	-	-	200
HCM Lane V/C Ratio	0.199	-	-	0.183	-	-	0.152
HCM Control Delay (s)	13.6	-	-	11.3	1.7	-	26.2
HCM Lane LOS	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	-	-	0.7	-	-	0.5

Intersection	
Int Delay, s/veh	32.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	875	14	174	972	7	26	0	202	0	0	12
Future Vol, veh/h	66	875	14	174	972	7	26	0	202	0	0	12
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	72	951	15	189	1057	8	28	0	220	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1065	0	0	966	0	0	2010	2546	483	2059	2549	533
Stage 1	-	-	-	-	-	-	1103	1103	-	1439	1439	-
Stage 2	-	-	-	-	-	-	907	1443	-	620	1110	-
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	650	-	-	709	-	-	35	26	530	32	26	491
Stage 1	-	-	-	-	-	-	225	285	-	140	197	-
Stage 2	-	-	-	-	-	-	297	196	-	442	283	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	650	-	-	709	-	-	~ 14	7	530	7	7	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 26	~ -4	-	8	23	-
Stage 1	-	-	-	-	-	-	171	217	-	106	68	-
Stage 2	-	-	-	-	-	-	100	68	-	197	215	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	4.2	$ 305.6	12.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	165	650	-	-	709	-	-	491
HCM Lane V/C Ratio	1.502	0.11	-	-	0.267	-	-	0.027
HCM Control Delay (s)	$ 305.6	11.2	1.2	-	11.9	2.9	-	12.5
HCM Lane LOS	F	B	A	-	B	A	-	B
HCM 95th %tile Q(veh)	16.1	0.4	-	-	1.1	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	499	370	487	296	664	258
Future Volume (veh/h)	499	370	487	296	664	258
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	542	402	529	322	722	0
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	600	1726	887	396	1345	
Arrive On Green	0.17	0.49	0.25	0.25	0.39	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	542	402	529	322	722	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	11.1	4.7	9.4	13.8	11.6	0.0
Cycle Q Clear(g_c), s	11.1	4.7	9.4	13.8	11.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	600	1726	887	396	1345	
V/C Ratio(X)	0.90	0.23	0.60	0.81	0.54	
Avail Cap(c_a), veh/h	600	1877	1037	463	1345	
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	0.00
Uniform Delay (d), s/veh	29.1	10.7	23.8	25.4	17.0	0.0
Incr Delay (d2), s/veh	17.0	0.1	0.7	9.4	1.5	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	5.8	1.7	3.8	5.9	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.2	10.8	24.5	34.8	18.5	0.0
LnGrp LOS	D	B	C	C	B	
Approach Vol, veh/h		944	851		722	
Approach Delay, s/veh		31.1	28.4		18.5	
Approach LOS		C	C		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.5		32.5	17.0	22.5
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				6.7		13.6	13.1	15.8
Green Ext Time (p_c), s				2.9		2.5	0.0	2.2

Intersection Summary		
HCM 6th Ctrl Delay		26.6
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	172	42	43	212	83	106	589	52	211	832	66
Future Volume (veh/h)	149	172	42	43	212	83	106	589	52	211	832	66
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	187	46	47	230	90	115	640	57	229	904	72
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	215	391	96	123	279	109	147	857	76	274	1104	88
Arrive On Green	0.12	0.27	0.27	0.07	0.22	0.22	0.08	0.26	0.26	0.15	0.33	0.33
Sat Flow, veh/h	1781	1450	357	1781	1280	501	1781	3301	294	1781	3334	266
Grp Volume(v), veh/h	162	0	233	47	0	320	115	344	353	229	482	494
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1781	0	1780	1781	1777	1818	1781	1777	1823
Q Serve(g_s), s	6.4	0.0	7.9	1.8	0.0	12.4	4.6	12.9	13.0	9.1	18.1	18.1
Cycle Q Clear(g_c), s	6.4	0.0	7.9	1.8	0.0	12.4	4.6	12.9	13.0	9.1	18.1	18.1
Prop In Lane	1.00		0.20	1.00		0.28	1.00		0.16	1.00		0.15
Lane Grp Cap(c), veh/h	215	0	488	123	0	388	147	462	472	274	588	603
V/C Ratio(X)	0.75	0.00	0.48	0.38	0.00	0.82	0.78	0.75	0.75	0.84	0.82	0.82
Avail Cap(c_a), veh/h	638	0	647	613	0	613	194	541	553	351	697	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	30.9	0.0	22.2	32.3	0.0	27.1	32.7	24.7	24.7	29.9	22.3	22.3
Incr Delay (d2), s/veh	5.3	0.0	0.7	2.0	0.0	5.1	14.1	4.7	4.7	13.0	6.6	6.5
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	3.0	0.0	3.3	0.8	0.0	5.6	2.5	5.7	5.9	4.7	8.1	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	22.9	34.3	0.0	32.2	46.8	29.4	29.4	42.9	28.9	28.7
LnGrp LOS	D	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		395			367			812			1205	
Approach Delay, s/veh		28.4			32.5			31.9			31.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	23.4	9.5	24.1	10.5	28.5	13.3	20.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.3	22.1	25.0	26.0	7.9	28.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	11.1	15.0	3.8	9.9	6.6	20.1	8.4	14.4
Green Ext Time (p_c), s	0.2	2.5	0.1	1.2	0.0	4.0	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1393	2	70	1210	99	10	13	75	96	8	12
Future Volume (veh/h)	11	1393	2	70	1210	99	10	13	75	96	8	12
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	12	1514	2	76	1315	108	11	14	0	104	9	13
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	2361	3	83	2308	1073	59	50		166	9	168
Arrive On Green	0.05	0.65	0.68	0.05	0.65	0.68	0.13	0.11	0.00	0.13	0.11	0.11
Sat Flow, veh/h	1781	3642	5	1781	3554	1585	116	468	1585	973	84	1585
Grp Volume(v), veh/h	12	739	777	76	1315	108	25	0	0	113	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	584	0	1585	1058	0	1585
Q Serve(g_s), s	0.7	27.5	27.5	4.7	22.7	2.6	0.1	0.0	0.0	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.7	27.5	27.5	4.7	22.7	2.6	12.4	0.0	0.0	12.3	0.0	0.8
Prop In Lane	1.00		0.00	1.00		1.00	0.44		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	81	1152	1212	83	2308	1073	125	0		204	0	168
V/C Ratio(X)	0.15	0.64	0.64	0.92	0.57	0.10	0.20	0.00		0.55	0.00	0.08
Avail Cap(c_a), veh/h	81	1152	1212	97	2308	1073	396	0		442	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	11.6	11.6	52.2	10.7	6.2	44.3	0.0	0.0	48.1	0.0	44.3
Incr Delay (d2), s/veh	0.8	2.7	2.6	60.4	1.0	0.2	0.8	0.0	0.0	2.3	0.0	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	0.3	10.8	11.3	3.5	8.5	0.9	0.6	0.0	0.0	3.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	14.4	14.3	112.6	11.8	6.4	45.1	0.0	0.0	50.4	0.0	44.5
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1528			1499			25			126	
Approach Delay, s/veh		14.6			16.5			45.1			49.8	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	79.2		18.7	12.0	79.3		18.7				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	7.7	30.5		14.3	3.7	25.7		14.4				
Green Ext Time (p_c), s	0.0	12.6		0.5	0.0	12.9		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	1181	106	22	1020	26	133	28	5	80	12	186
Future Volume (veh/h)	203	1181	106	22	1020	26	133	28	5	80	12	186
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	221	1284	115	24	1109	28	145	30	5	87	13	202
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	233	1799	161	69	2643	67	106	93	16	207	31	211
Arrive On Green	0.07	0.55	0.57	0.04	0.52	0.54	0.08	0.06	0.06	0.16	0.13	0.13
Sat Flow, veh/h	3456	3300	295	1781	5122	129	1781	1563	260	1559	233	1585
Grp Volume(v), veh/h	221	690	709	24	737	400	145	0	35	100	0	202
Grp Sat Flow(s),veh/h/ln	1728	1777	1817	1781	1702	1847	1781	0	1823	1792	0	1585
Q Serve(g_s), s	8.3	37.5	37.7	1.7	17.4	17.4	7.7	0.0	2.4	6.6	0.0	16.5
Cycle Q Clear(g_c), s	8.3	37.5	37.7	1.7	17.4	17.4	7.7	0.0	2.4	6.6	0.0	16.5
Prop In Lane	1.00		0.16	1.00		0.07	1.00		0.14	0.87		1.00
Lane Grp Cap(c), veh/h	233	969	991	69	1757	953	106	0	109	238	0	211
V/C Ratio(X)	0.95	0.71	0.72	0.35	0.42	0.42	1.37	0.00	0.32	0.42	0.00	0.96
Avail Cap(c_a), veh/h	478	969	991	96	1757	953	329	0	337	356	0	315
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	60.4	22.0	21.8	60.9	19.4	19.4	59.6	0.0	58.6	50.5	0.0	56.0
Incr Delay (d2), s/veh	17.3	4.4	4.4	3.0	0.7	1.4	178.1	0.0	1.7	1.2	0.0	31.8
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	16.5	16.9	0.8	7.0	7.8	8.7	0.0	1.2	3.0	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	26.4	26.3	63.9	20.2	20.7	237.8	0.0	60.3	51.7	0.0	87.8
LnGrp LOS	E	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1620			1161			180			302	
Approach Delay, s/veh		33.4			21.3			203.3			75.8	
Approach LOS		C			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	78.8		24.5	15.8	75.1		14.7
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0
Max Green Setting (Gmax), s	10.0	47.1		* 29	21.0	36.1		27.0
Max Q Clear Time (g_c+I1), s	4.7	40.5		19.5	11.3	20.4		9.7
Green Ext Time (p_c), s	0.0	4.6		0.8	0.5	6.9		0.9

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	664	38	656	612	100	41	238	658	116	108	74
Future Volume (veh/h)	141	664	38	656	612	100	41	238	658	116	108	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	153	722	41	713	665	109	45	259	715	126	117	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	178	1104	492	866	1430	234	68	389	727	162	499	423
Arrive On Green	0.10	0.31	0.31	0.25	0.47	0.47	0.04	0.21	0.21	0.09	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	3456	3057	500	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	153	722	41	713	386	388	45	259	715	126	117	80
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1780	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.8	24.6	2.2	27.3	20.7	20.7	3.5	17.8	27.2	9.7	6.9	5.5
Cycle Q Clear(g_c), s	11.8	24.6	2.2	27.3	20.7	20.7	3.5	17.8	27.2	9.7	6.9	5.5
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1104	492	866	831	833	68	389	727	162	499	423
V/C Ratio(X)	0.86	0.65	0.08	0.82	0.46	0.47	0.66	0.67	0.98	0.78	0.23	0.19
Avail Cap(c_a), veh/h	178	1104	492	889	831	833	153	389	727	216	499	423
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	62.0	41.7	24.8	49.5	25.3	25.3	66.4	51.0	37.4	62.3	40.2	39.7
Incr Delay (d2), s/veh	31.9	3.0	0.3	6.2	1.9	1.9	10.2	4.3	29.2	12.1	0.2	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	7.0	11.3	1.0	12.5	9.2	9.3	1.8	8.9	14.1	4.9	3.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.9	44.8	25.1	55.7	27.2	27.2	76.6	55.3	66.6	74.4	40.4	39.9
LnGrp LOS	F	D	C	E	C	C	E	E	E	E	D	D
Approach Vol, veh/h		916			1487			1019			323	
Approach Delay, s/veh		52.1			40.9			64.2			53.5	
Approach LOS		D			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	48.4	9.4	42.2	18.0	70.4	17.6	34.0				
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9				
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29				
Max Q Clear Time (g_c+I1), s	10.3	27.6	6.5	9.9	14.8	23.7	12.7	30.2				
Green Ext Time (p_c), s	1.5	4.1	0.0	0.9	0.0	5.7	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			51.0									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	536	31	16	545	31	10	2	10	14	12	16
Future Volume (veh/h)	10	536	31	16	545	31	10	2	10	14	12	16
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	11	583	34	17	592	34	11	2	11	15	13	17
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	1331	77	803	1346	77	145	14	46	127	32	38
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	9	1732	100	806	1752	101	650	230	745	499	517	616
Grp Volume(v), veh/h	628	0	0	17	0	626	24	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1840	0	0	806	0	1852	1625	0	0	1632	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.0	0.2	0.0	5.9	0.6	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.02		0.05	1.00		0.05	0.46		0.46	0.33		0.38
Lane Grp Cap(c), veh/h	1488	0	0	803	0	1424	205	0	0	196	0	0
V/C Ratio(X)	0.42	0.00	0.00	0.02	0.00	0.44	0.12	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1488	0	0	803	0	1424	802	0	0	827	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.0	0.0	0.0	1.4	0.0	2.0	22.4	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.6	0.0	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	0.7	0.0	0.0	0.0	0.0	0.7	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.9	0.0	0.0	1.4	0.0	3.0	22.6	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		628			643			24			45	
Approach Delay, s/veh		2.9			3.0			22.6			23.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		7.1		43.0		7.1				
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0				
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0				
Max Q Clear Time (g_c+I1), s		7.9		2.6		7.9		3.3				
Green Ext Time (p_c), s		4.9		0.1		4.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			4.0
HCM 6th LOS			A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	16.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	561	585	108	129	30
Future Vol, veh/h	44	561	585	108	129	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	-	-	-	-	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	48	610	636	117	140	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	753	0	-	0	1401	695
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	706	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	857	-	-	-	154	442
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	489	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	141	442
Mov Cap-2 Maneuver	-	-	-	-	141	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	489	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	146.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	-	-	162
HCM Lane V/C Ratio	0.056	-	-	-	1.067
HCM Control Delay (s)	9.4	0	-	-	146.6
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	8.8

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	409	49	101	370	5	28	10	111	7	3	11
Future Vol, veh/h	11	409	49	101	370	5	28	10	111	7	3	11
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	-	-	-	-	-	-	-	-	-	-	-	-
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	12	445	53	110	402	5	30	11	121	8	3	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	498	0	0	1128	1123	472	1187	1147	405
Stage 1	-	-	-	-	-	-	496	496	-	625	625	-
Stage 2	-	-	-	-	-	-	632	627	-	562	522	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1152	-	-	1066	-	-	181	206	592	165	199	646
Stage 1	-	-	-	-	-	-	556	545	-	473	477	-
Stage 2	-	-	-	-	-	-	468	476	-	512	531	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1152	-	-	1066	-	-	155	176	592	111	170	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	176	-	111	170	-
Stage 1	-	-	-	-	-	-	548	537	-	466	413	-
Stage 2	-	-	-	-	-	-	395	412	-	393	523	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.9	23.7	23.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	351	1152	-	-	1066	-	-	215
HCM Lane V/C Ratio	0.461	0.01	-	-	0.103	-	-	0.106
HCM Control Delay (s)	23.7	8.2	0	-	8.8	0	-	23.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.3	0	-	-	0.3	-	-	0.4

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	45	43	386	52	94
Future Vol, veh/h	381	45	43	386	52	94
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	414	49	47	420	57	102
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	16.4	17.1	10.9
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	10%
Vol Thru, %	0%	89%	90%
Vol Right, %	64%	11%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	146	426	429
LT Vol	52	0	43
Through Vol	0	381	386
RT Vol	94	45	0
Lane Flow Rate	159	463	466
Geometry Grp	1	1	1
Degree of Util (X)	0.256	0.64	0.654
Departure Headway (Hd)	5.812	4.978	5.049
Convergence, Y/N	Yes	Yes	Yes
Cap	617	727	718
Service Time	3.854	2.991	3.062
HCM Lane V/C Ratio	0.258	0.637	0.649
HCM Control Delay	10.9	16.4	17.1
HCM Lane LOS	B	C	C
HCM 95th-tile Q	1	4.7	4.9

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	46	9	72	0	187	0	321	207	164	233	0
Future Vol, veh/h	40	46	9	72	0	187	0	321	207	164	233	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	50	10	78	0	203	0	349	225	178	253	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	12.8	16.4	17.6	27.8
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	42%	28%	41%
Vol Thru, %	100%	0%	48%	0%	59%
Vol Right, %	0%	100%	9%	72%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	321	207	95	259	397
LT Vol	0	0	40	72	164
Through Vol	321	0	46	0	233
RT Vol	0	207	9	187	0
Lane Flow Rate	349	225	103	282	432
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.648	0.373	0.217	0.513	0.769
Departure Headway (Hd)	6.684	5.969	7.575	6.558	6.412
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	541	601	472	549	565
Service Time	4.438	3.723	5.651	4.613	4.463
HCM Lane V/C Ratio	0.645	0.374	0.218	0.514	0.765
HCM Control Delay	21	12.3	12.8	16.4	27.8
HCM Lane LOS	C	B	B	C	D
HCM 95th-tile Q	4.6	1.7	0.8	2.9	7

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	255	125	67	2	72	0	0	90	45
Future Vol, veh/h	0	0	0	255	125	67	2	72	0	0	90	45
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	277	136	73	2	78	0	0	98	49
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.3	9	9.3
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	100%	0%	0%
Vol Thru, %	97%	0%	65%	67%
Vol Right, %	0%	0%	35%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	255	192	135
LT Vol	2	255	0	0
Through Vol	72	0	125	90
RT Vol	0	0	67	45
Lane Flow Rate	80	277	209	147
Geometry Grp	2	7	7	2
Degree of Util (X)	0.118	0.431	0.281	0.203
Departure Headway (Hd)	5.265	5.6	4.852	4.972
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	679	640	737	720
Service Time	3.314	3.35	2.602	3.013
HCM Lane V/C Ratio	0.118	0.433	0.284	0.204
HCM Control Delay	9	12.6	9.5	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2.2	1.2	0.8

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	597	13	79	628	77	6	1	45	31	0	34
Future Vol, veh/h	31	597	13	79	628	77	6	1	45	31	0	34
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	34	649	14	86	683	84	7	1	49	34	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	767	0	0	663	0	0	1238	1663	332	1290	1628	384
Stage 1	-	-	-	-	-	-	724	724	-	897	897	-
Stage 2	-	-	-	-	-	-	514	939	-	393	731	-
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	842	-	-	922	-	-	132	96	664	121	101	614
Stage 1	-	-	-	-	-	-	383	429	-	301	357	-
Stage 2	-	-	-	-	-	-	511	341	-	603	425	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	842	-	-	922	-	-	103	75	664	93	79	614
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	173	-	196	175	-
Stage 1	-	-	-	-	-	-	358	402	-	282	298	-
Stage 2	-	-	-	-	-	-	401	285	-	521	398	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1.4	12.9	20.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	842	-	-	922	-	-	304
HCM Lane V/C Ratio	0.111	0.04	-	-	0.093	-	-	0.232
HCM Control Delay (s)	12.9	9.5	0.3	-	9.3	0.6	-	20.4
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.3	-	-	0.9

Intersection	
Intersection Delay, s/veh	102.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	590	74	246	634	59	76	69	165	60	96	57
Future Vol, veh/h	58	590	74	246	634	59	76	69	165	60	96	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	641	80	267	689	64	83	75	179	65	104	62
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	127.7	117.2	31.9	52.7
HCM LOS	F	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	52%	0%	100%	0%	0%	100%	0%	0%	28%
Vol Thru, %	48%	0%	0%	100%	73%	0%	100%	78%	45%
Vol Right, %	0%	100%	0%	0%	27%	0%	0%	22%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	165	58	393	271	246	423	270	213
LT Vol	76	0	58	0	0	246	0	0	60
Through Vol	69	0	0	393	197	0	423	211	96
RT Vol	0	165	0	0	74	0	0	59	57
Lane Flow Rate	158	179	63	428	294	267	459	294	232
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.55	0.578	0.201	1.305	0.882	0.813	1.332	0.84	0.795
Departure Headway (Hd)	13.814	12.806	12.162	11.633	11.43	11.553	11.023	10.861	13.265
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	263	283	297	316	321	316	335	335	276
Service Time	11.514	10.506	9.862	9.333	9.13	9.253	8.723	8.561	10.965
HCM Lane V/C Ratio	0.601	0.633	0.212	1.354	0.916	0.845	1.37	0.878	0.841
HCM Control Delay	32.2	31.7	17.9	190.4	60	49.6	198.8	51.1	52.7
HCM Lane LOS	D	D	C	F	F	E	F	F	F
HCM 95th-tile Q	3	3.4	0.7	19.5	8.1	6.8	21.2	7.4	6.2

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	766	51	165	892	21	24	1	93	3	5	15
Future Vol, veh/h	1	766	51	165	892	21	24	1	93	3	5	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	833	55	179	970	23	26	1	101	3	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	993	0	0	888	0	0	1709	2214	444	1759	2230	497
Stage 1	-	-	-	-	-	-	863	863	-	1340	1340	-
Stage 2	-	-	-	-	-	-	846	1351	-	419	890	-
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	692	-	-	758	-	-	59	43	561	54	42	519
Stage 1	-	-	-	-	-	-	316	370	-	161	220	-
Stage 2	-	-	-	-	-	-	323	217	-	582	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	692	-	-	758	-	-	31	20	561	25	20	519
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	78	-	105	68	-
Stage 1	-	-	-	-	-	-	315	369	-	161	104	-
Stage 2	-	-	-	-	-	-	140	102	-	474	358	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.5	12.8	28.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	561	692	-	-	758	-	-	176
HCM Lane V/C Ratio	0.18	0.002	-	-	0.237	-	-	0.142
HCM Control Delay (s)	12.8	10.2	-	-	11.2	2.2	-	28.8
HCM Lane LOS	B	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	0	-	-	0.9	-	-	0.5

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	892	2	171	923	10	17	0	138	8	1	9
Future Vol, veh/h	63	892	2	171	923	10	17	0	138	8	1	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	68	970	2	186	1003	11	18	0	150	9	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1014	0	0	972	0	0	1981	2493	486	2002	2489	507
Stage 1	-	-	-	-	-	-	1107	1107	-	1381	1381	-
Stage 2	-	-	-	-	-	-	874	1386	-	621	1108	-
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	680	-	-	705	-	-	37	29	527	35	29	511
Stage 1	-	-	-	-	-	-	224	284	-	152	210	-
Stage 2	-	-	-	-	-	-	311	209	-	442	284	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	680	-	-	705	-	-	~ 16	9	527	11	9	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	13	-	52	32	-
Stage 1	-	-	-	-	-	-	175	222	-	119	83	-
Stage 2	-	-	-	-	-	-	119	82	-	248	222	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	4	45.2	56.5
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	249	680	-	-	705	-	-	89
HCM Lane V/C Ratio	0.677	0.101	-	-	0.264	-	-	0.22
HCM Control Delay (s)	45.2	10.9	1	-	11.9	2.6	-	56.5
HCM Lane LOS	E	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	4.4	0.3	-	-	1.1	-	-	0.8

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	455	425	606	430	457	465
Future Volume (veh/h)	455	425	606	430	457	465
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	495	462	659	467	497	0
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	574	1800	996	444	1291	
Arrive On Green	0.17	0.51	0.28	0.28	0.37	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	495	462	659	467	497	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	10.4	5.5	12.3	21.0	7.9	0.0
Cycle Q Clear(g_c), s	10.4	5.5	12.3	21.0	7.9	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	574	1800	996	444	1291	
V/C Ratio(X)	0.86	0.26	0.66	1.05	0.39	
Avail Cap(c_a), veh/h	576	1801	996	444	1291	
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	0.00
Uniform Delay (d), s/veh	30.4	10.5	23.8	27.0	17.2	0.0
Incr Delay (d2), s/veh	12.6	0.1	1.6	56.9	0.9	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	5.2	2.0	5.1	14.5	3.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.0	10.6	25.5	83.9	18.1	0.0
LnGrp LOS	D	B	C	F	B	
Approach Vol, veh/h		957	1126		497	
Approach Delay, s/veh		27.4	49.7		18.1	
Approach LOS		C	D		B	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	42.5	32.5	17.0	25.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	38.0	28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s	7.5	9.9	12.4	23.0
Green Ext Time (p_c), s	3.3	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	37	66	120	61	85	148	754	28	120	657	186
Future Volume (veh/h)	139	37	66	120	61	85	148	754	28	120	657	186
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	151	40	72	130	66	92	161	820	30	130	714	202
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	221	90	163	199	98	137	178	1118	41	162	849	240
Arrive On Green	0.12	0.15	0.15	0.11	0.14	0.14	0.10	0.32	0.32	0.09	0.31	0.31
Sat Flow, veh/h	1781	599	1078	1781	707	986	1781	3496	128	1781	2734	773
Grp Volume(v), veh/h	151	0	112	130	0	158	161	417	433	130	464	452
Grp Sat Flow(s),veh/h/ln	1781	0	1676	1781	0	1693	1781	1777	1847	1781	1777	1731
Q Serve(g_s), s	4.5	0.0	3.3	3.9	0.0	4.9	4.9	11.5	11.5	3.9	13.4	13.4
Cycle Q Clear(g_c), s	4.5	0.0	3.3	3.9	0.0	4.9	4.9	11.5	11.5	3.9	13.4	13.4
Prop In Lane	1.00		0.64	1.00		0.58	1.00		0.07	1.00		0.45
Lane Grp Cap(c), veh/h	221	0	253	199	0	235	178	568	590	162	552	538
V/C Ratio(X)	0.68	0.00	0.44	0.65	0.00	0.67	0.91	0.73	0.73	0.80	0.84	0.84
Avail Cap(c_a), veh/h	841	0	791	809	0	768	178	613	637	162	597	582
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	23.1	0.0	21.3	23.4	0.0	22.5	24.5	16.7	16.7	24.6	17.7	17.7
Incr Delay (d2), s/veh	3.7	0.0	1.2	3.6	0.0	3.3	41.6	4.2	4.0	24.7	9.8	10.1
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	2.0	0.0	1.3	1.7	0.0	2.0	4.0	4.8	4.9	2.7	6.3	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	0.0	22.5	27.1	0.0	25.8	66.1	20.9	20.7	49.2	27.6	27.8
LnGrp LOS	C	A	C	C	A	C	E	C	C	D	C	C
Approach Vol, veh/h		263			288			1011			1046	
Approach Delay, s/veh		25.0			26.4			28.0			30.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	22.1	10.6	12.8	10.0	21.6	11.3	12.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	25.0	26.0	5.5	18.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	5.9	13.5	5.9	5.3	6.9	15.4	6.5	6.9
Green Ext Time (p_c), s	0.0	2.5	0.3	0.5	0.0	1.7	0.4	0.8

Intersection Summary		
HCM 6th Ctrl Delay		28.5
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1077	1	57	1385	136	5	21	117	169	7	18
Future Volume (veh/h)	15	1077	1	57	1385	136	5	21	117	169	7	18
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	16	1171	1	62	1505	148	5	23	0	184	8	20
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	1771	2	75	1715	808	39	137		172	5	432
Arrive On Green	0.05	0.49	0.51	0.04	0.48	0.51	0.30	0.27	0.00	0.30	0.27	0.27
Sat Flow, veh/h	1781	3644	3	1781	3554	1585	0	501	1585	396	17	1585
Grp Volume(v), veh/h	16	571	601	62	1505	148	28	0	0	192	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1870	1781	1777	1585	501	0	1585	413	0	1585
Q Serve(g_s), s	1.0	26.8	26.8	3.8	41.8	5.6	0.0	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.0	26.8	26.8	3.8	41.8	5.6	33.0	0.0	0.0	33.0	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.18		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	81	863	909	75	1715	808	189	0		188	0	432
V/C Ratio(X)	0.20	0.66	0.66	0.82	0.88	0.18	0.15	0.00		1.02	0.00	0.05
Avail Cap(c_a), veh/h	81	863	909	97	1715	808	189	0		188	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	21.4	21.4	52.3	25.5	14.6	31.8	0.0	0.0	45.2	0.0	29.5
Incr Delay (d2), s/veh	1.2	4.0	3.8	33.9	6.7	0.5	0.4	0.0	0.0	71.1	0.0	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	0.5	11.7	12.3	2.4	18.4	2.1	0.5	0.0	0.0	8.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	25.4	25.2	86.2	32.2	15.1	32.1	0.0	0.0	116.3	0.0	29.5
LnGrp LOS	D	C	C	F	C	B	C	A		F	A	C
Approach Vol, veh/h		1188			1715			28			212	
Approach Delay, s/veh		25.6			32.7			32.1			108.1	
Approach LOS		C			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	61.4		37.0	12.0	61.0		37.0
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0
Max Q Clear Time (g_c+I1), s	6.8	29.8		35.0	4.0	44.8		35.0
Green Ext Time (p_c), s	0.0	9.0		0.0	0.0	8.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			35.1
HCM 6th LOS			D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1026	35	6	1132	11	150	31	9	39	18	234
Future Volume (veh/h)	183	1026	35	6	1132	11	150	31	9	39	18	234
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	199	1115	38	7	1230	12	163	34	10	42	20	254
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	208	1804	61	64	2555	25	140	109	32	199	95	257
Arrive On Green	0.06	0.51	0.54	0.04	0.49	0.51	0.10	0.08	0.08	0.18	0.16	0.16
Sat Flow, veh/h	3456	3506	119	1781	5214	51	1781	1388	408	1226	584	1585
Grp Volume(v), veh/h	199	565	588	7	803	439	163	0	44	62	0	254
Grp Sat Flow(s),veh/h/ln	1728	1777	1849	1781	1702	1861	1781	0	1797	1809	0	1585
Q Serve(g_s), s	8.0	31.7	31.7	0.5	22.0	22.0	11.0	0.0	3.2	4.1	0.0	22.4
Cycle Q Clear(g_c), s	8.0	31.7	31.7	0.5	22.0	22.0	11.0	0.0	3.2	4.1	0.0	22.4
Prop In Lane	1.00		0.06	1.00		0.03	1.00		0.23	0.68		1.00
Lane Grp Cap(c), veh/h	208	914	951	64	1668	912	140	0	141	293	0	257
V/C Ratio(X)	0.96	0.62	0.62	0.11	0.48	0.48	1.16	0.00	0.31	0.21	0.00	0.99
Avail Cap(c_a), veh/h	395	914	951	89	1668	912	303	0	305	320	0	281
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	65.6	24.2	24.1	65.3	23.8	23.8	63.0	0.0	60.9	50.0	0.0	58.5
Incr Delay (d2), s/veh	20.8	3.1	3.0	0.8	1.0	1.8	93.9	0.0	1.2	0.4	0.0	49.1
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	14.0	14.5	0.3	9.1	10.2	8.5	0.0	1.5	1.9	0.0	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.5	27.3	27.1	66.1	24.8	25.6	156.9	0.0	62.2	50.3	0.0	107.6
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1352			1249			207			316	
Approach Delay, s/veh		36.0			25.3			136.8			96.4	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	80.0		29.9	15.4	76.5		18.2
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2
Max Green Setting (Gmax), s	10.0	58.1		* 28	19.0	49.1		26.8
Max Q Clear Time (g_c+I1), s	3.5	34.7		25.4	11.0	25.0		13.0
Green Ext Time (p_c), s	0.0	8.5		0.3	0.4	9.4		0.9

Intersection Summary		
HCM 6th Ctrl Delay		44.5
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	636	66	685	728	101	49	130	519	80	108	85
Future Volume (veh/h)	84	636	66	685	728	101	49	130	519	80	108	85
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	691	72	745	791	110	53	141	564	87	117	92
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	1462	652	825	1839	256	79	266	604	120	321	272
Arrive On Green	0.07	0.41	0.41	0.24	0.59	0.59	0.04	0.14	0.14	0.07	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	3456	3133	436	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	91	691	72	745	449	452	53	141	564	87	117	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1792	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.0	19.9	3.2	29.3	19.5	19.5	4.1	9.8	14.4	6.7	7.7	7.1
Cycle Q Clear(g_c), s	7.0	19.9	3.2	29.3	19.5	19.5	4.1	9.8	14.4	6.7	7.7	7.1
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	1462	652	825	1043	1052	79	266	604	120	321	272
V/C Ratio(X)	0.73	0.47	0.11	0.90	0.43	0.43	0.67	0.53	0.93	0.72	0.36	0.34
Avail Cap(c_a), veh/h	178	1462	652	889	1043	1052	153	389	708	216	456	386
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	63.8	30.1	16.9	51.7	16.0	16.0	65.9	55.7	41.6	64.0	51.2	51.0
Incr Delay (d2), s/veh	8.6	1.1	0.3	11.9	1.3	1.3	9.3	1.6	17.9	7.9	0.7	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	3.5	8.8	1.6	14.0	8.3	8.4	2.1	4.8	6.8	3.3	3.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	31.2	17.3	63.6	17.3	17.3	75.2	57.4	59.6	71.9	51.9	51.7
LnGrp LOS	E	C	B	E	B	B	E	E	E	E	D	D
Approach Vol, veh/h		854			1646			758			296	
Approach Delay, s/veh		34.4			38.2			60.2			57.7	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.3	62.5	10.2	28.9	13.8	87.1	14.4	24.8
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	12.3	22.9	7.1	10.7	10.0	22.5	9.7	17.4
Green Ext Time (p_c), s	1.2	4.7	0.0	0.9	0.1	7.0	0.1	2.5

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	527	29	37	620	39	21	2	18	22	6	13
Future Volume (veh/h)	6	527	29	37	620	39	21	2	18	22	6	13
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	7	573	32	40	674	42	23	2	20	24	7	14
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	76	1327	73	800	1326	83	159	11	50	164	24	36
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	5	1744	96	815	1742	109	727	157	707	773	336	501
Grp Volume(v), veh/h	612	0	0	40	0	716	45	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1845	0	0	815	0	1851	1592	0	0	1609	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	0.4	0.0	7.6	1.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.06	0.51		0.44	0.53		0.31
Lane Grp Cap(c), veh/h	1476	0	0	800	0	1409	220	0	0	223	0	0
V/C Ratio(X)	0.41	0.00	0.00	0.05	0.00	0.51	0.20	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	1476	0	0	800	0	1409	792	0	0	802	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	1.5	0.0	2.4	22.4	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	1.3	0.5	0.0	0.0	0.4	0.0	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	0.8	0.0	0.0	0.0	0.0	1.1	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.0	0.0	1.6	0.0	3.7	22.9	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		612			756			45			45	
Approach Delay, s/veh		3.0			3.6			22.9			22.8	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		7.6		43.0		7.6				
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0				
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0				
Max Q Clear Time (g_c+I1), s		8.0		3.2		9.6		3.2				
Green Ext Time (p_c), s		4.7		0.1		6.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			4.5									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	12.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	496	559	108	153	19
Future Vol, veh/h	19	496	559	108	153	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	21	539	608	117	166	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	725	0	-	0	1248	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	878	-	-	-	191	459
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	878	-	-	-	185	459
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	99.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	878	-	-	-	198
HCM Lane V/C Ratio	0.024	-	-	-	0.944
HCM Control Delay (s)	9.2	0	-	-	99.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	7.7

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	393	22	101	385	2	15	7	78	4	6	6
Future Vol, veh/h	9	393	22	101	385	2	15	7	78	4	6	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	10	427	24	110	418	2	16	8	85	4	7	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	420	0	0	451	0	0	1105	1099	439	1145	1110	419
Stage 1	-	-	-	-	-	-	459	459	-	639	639	-
Stage 2	-	-	-	-	-	-	646	640	-	506	471	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1139	-	-	1109	-	-	188	212	618	177	209	634
Stage 1	-	-	-	-	-	-	582	566	-	464	470	-
Stage 2	-	-	-	-	-	-	460	470	-	549	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1139	-	-	1109	-	-	162	183	618	132	180	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	183	-	132	180	-
Stage 1	-	-	-	-	-	-	575	559	-	458	409	-
Stage 2	-	-	-	-	-	-	390	409	-	462	553	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.8	17.8	22.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	389	1139	-	-	1109	-	-	219
HCM Lane V/C Ratio	0.279	0.009	-	-	0.099	-	-	0.079
HCM Control Delay (s)	17.8	8.2	0	-	8.6	0	-	22.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	0.3

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	32	26	372	46	91
Future Vol, veh/h	315	32	26	372	46	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	342	35	28	404	50	99
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.6	14.2	10.1
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	34%	0%	7%
Vol Thru, %	0%	91%	93%
Vol Right, %	66%	9%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	137	347	398
LT Vol	46	0	26
Through Vol	0	315	372
RT Vol	91	32	0
Lane Flow Rate	149	377	433
Geometry Grp	1	1	1
Degree of Util (X)	0.227	0.5	0.574
Departure Headway (Hd)	5.499	4.776	4.779
Convergence, Y/N	Yes	Yes	Yes
Cap	657	747	748
Service Time	3.499	2.86	2.86
HCM Lane V/C Ratio	0.227	0.505	0.579
HCM Control Delay	10.1	12.6	14.2
HCM Lane LOS	B	B	B
HCM 95th-tile Q	0.9	2.8	3.7

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	6	2	209	0	59	0	100	324	110	139	0
Future Vol, veh/h	3	6	2	209	0	59	0	100	324	110	139	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	7	2	227	0	64	0	109	352	120	151	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.5	13.7	12.2	12.8
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	27%	78%	44%
Vol Thru, %	100%	0%	55%	0%	56%
Vol Right, %	0%	100%	18%	22%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	324	11	268	249
LT Vol	0	0	3	209	110
Through Vol	100	0	6	0	139
RT Vol	0	324	2	59	0
Lane Flow Rate	109	352	12	291	271
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.176	0.501	0.021	0.466	0.425
Departure Headway (Hd)	5.831	5.122	6.33	5.754	5.656
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	615	704	563	626	636
Service Time	3.57	2.86	4.393	3.792	3.698
HCM Lane V/C Ratio	0.177	0.5	0.021	0.465	0.426
HCM Control Delay	9.8	12.9	9.5	13.7	12.8
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.6	2.8	0.1	2.5	2.1

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	160	105	35	6	52	0	0	59	7
Future Vol, veh/h	0	0	0	160	105	35	6	52	0	0	59	7
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	174	114	38	7	57	0	0	64	8
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.3	8.3	8.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	75%	89%
Vol Right, %	0%	0%	25%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	160	140	66
LT Vol	6	160	0	0
Through Vol	52	0	105	59
RT Vol	0	0	35	7
Lane Flow Rate	63	174	152	72
Geometry Grp	2	7	7	2
Degree of Util (X)	0.084	0.26	0.199	0.094
Departure Headway (Hd)	4.822	5.379	4.703	4.728
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	744	671	768	759
Service Time	2.844	3.079	2.403	2.749
HCM Lane V/C Ratio	0.085	0.259	0.198	0.095
HCM Control Delay	8.3	10	8.6	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1	0.7	0.3

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	55	527	9	83	529	79	11	1	32	18	1	62
Future Vol, veh/h	55	527	9	83	529	79	11	1	32	18	1	62
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	60	573	10	90	575	86	12	1	35	20	1	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	661	0	0	583	0	0	1166	1539	292	1205	1501	331
Stage 1	-	-	-	-	-	-	698	698	-	798	798	-
Stage 2	-	-	-	-	-	-	468	841	-	407	703	-
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	923	-	-	987	-	-	149	115	704	140	121	665
Stage 1	-	-	-	-	-	-	397	440	-	346	396	-
Stage 2	-	-	-	-	-	-	545	379	-	592	438	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	923	-	-	987	-	-	110	89	704	109	93	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	183	-	212	189	-
Stage 1	-	-	-	-	-	-	359	398	-	313	338	-
Stage 2	-	-	-	-	-	-	417	324	-	507	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.5	14.4	15.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	430	923	-	-	987	-	-	442
HCM Lane V/C Ratio	0.111	0.065	-	-	0.091	-	-	0.199
HCM Control Delay (s)	14.4	9.2	0.4	-	9	0.5	-	15.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.3	-	-	0.7

Intersection	
Intersection Delay, s/veh	61.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	502	70	199	485	43	79	141	186	54	91	58
Future Vol, veh/h	51	502	70	199	485	43	79	141	186	54	91	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	546	76	216	527	47	86	153	202	59	99	63
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	83.1	59.5	40	44
HCM LOS	F	F	E	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	0%	100%	0%	0%	100%	0%	0%	27%
Vol Thru, %	64%	0%	0%	100%	71%	0%	100%	79%	45%
Vol Right, %	0%	100%	0%	0%	29%	0%	0%	21%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	186	51	335	237	199	323	205	203
LT Vol	79	0	51	0	0	199	0	0	54
Through Vol	141	0	0	335	167	0	323	162	91
RT Vol	0	186	0	0	70	0	0	43	58
Lane Flow Rate	239	202	55	364	258	216	351	222	221
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.783	0.613	0.178	1.119	0.779	0.666	1.032	0.644	0.743
Departure Headway (Hd)	12.295	11.375	11.879	11.348	11.129	11.551	11.021	10.865	12.469
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	297	319	304	324	328	316	330	334	291
Service Time	9.995	9.075	9.579	9.048	8.829	9.251	8.721	8.565	10.169
HCM Lane V/C Ratio	0.805	0.633	0.181	1.123	0.787	0.684	1.064	0.665	0.759
HCM Control Delay	48.1	30.5	17.1	121	43.9	34.5	92.8	31.3	44
HCM Lane LOS	E	D	C	F	E	D	F	D	E
HCM 95th-tile Q	6.1	3.8	0.6	14.1	6.2	4.5	11.9	4.2	5.5

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	732	15	97	711	10	20	0	82	3	0	2
Future Vol, veh/h	1	732	15	97	711	10	20	0	82	3	0	2
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	796	16	105	773	11	22	0	89	3	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	784	0	0	812	0	0	1403	-	406	1389	1803	392
Stage 1	-	-	-	-	-	-	806	-	-	989	989	-
Stage 2	-	-	-	-	-	-	597	-	-	400	814	-
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	830	-	-	810	-	-	100	0	594	102	79	607
Stage 1	-	-	-	-	-	-	342	0	-	265	323	-
Stage 2	-	-	-	-	-	-	456	0	-	597	390	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	830	-	-	810	-	-	82	-	594	71	61	607
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	-	-	176	149	-
Stage 1	-	-	-	-	-	-	341	-	-	264	249	-
Stage 2	-	-	-	-	-	-	350	-	-	506	389	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	12.1	20
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	594	830	-	-	810	-	-	246
HCM Lane V/C Ratio	0.15	0.001	-	-	0.13	-	-	0.022
HCM Control Delay (s)	12.1	9.3	-	-	10.1	0.9	-	20
HCM Lane LOS	B	A	-	-	B	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	710	9	121	689	0	31	1	342	1	0	2
Future Vol, veh/h	21	710	9	121	689	0	31	1	342	1	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	23	772	10	132	749	0	34	1	372	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	749	0	0	782	0	0	1462	1836	391	1446	1841	375
Stage 1	-	-	-	-	-	-	823	823	-	1013	1013	-
Stage 2	-	-	-	-	-	-	639	1013	-	433	828	-
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	856	-	-	832	-	-	90	75	608	92	74	623
Stage 1	-	-	-	-	-	-	334	386	-	256	315	-
Stage 2	-	-	-	-	-	-	431	315	-	571	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	832	-	-	68	52	608	27	51	623
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	175	-	73	163	-
Stage 1	-	-	-	-	-	-	318	367	-	244	229	-
Stage 2	-	-	-	-	-	-	313	229	-	211	366	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2.4	31.7	25.7
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	524	856	-	-	832	-	-	177
HCM Lane V/C Ratio	0.776	0.027	-	-	0.158	-	-	0.018
HCM Control Delay (s)	31.7	9.3	0.2	-	10.1	1	-	25.7
HCM Lane LOS	D	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	7	0.1	-	-	0.6	-	-	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	478	680	543	408	448	275
Future Volume (veh/h)	478	680	543	408	448	275
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	520	739	590	443	487	0
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	621	2068	1249	557	1093	
Arrive On Green	0.18	0.58	0.35	0.35	0.32	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	520	739	590	443	487	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	12.9	9.7	11.4	22.3	9.9	0.0
Cycle Q Clear(g_c), s	12.9	9.7	11.4	22.3	9.9	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	621	2068	1249	557	1093	
V/C Ratio(X)	0.84	0.36	0.47	0.80	0.45	
Avail Cap(c_a), veh/h	800	4337	3333	1487	1093	
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	0.00
Uniform Delay (d), s/veh	35.1	9.8	22.3	25.8	24.1	0.0
Incr Delay (d2), s/veh	6.2	0.1	0.3	2.6	1.3	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	5.8	3.5	4.7	8.4	4.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.3	9.9	22.6	28.5	25.4	0.0
LnGrp LOS	D	A	C	C	C	
Approach Vol, veh/h		1259	1033		487	
Approach Delay, s/veh		22.8	25.1		25.4	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	56.0	32.5	20.4	35.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	108.0	28.0	20.5	83.0
Max Q Clear Time (g_c+I1), s	11.7	11.9	14.9	24.3
Green Ext Time (p_c), s	6.3	1.6	1.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	84	47	103	72	144	37	489	121	171	794	20
Future Volume (veh/h)	86	84	47	103	72	144	37	489	121	171	794	20
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	93	91	51	112	78	157	40	532	132	186	863	22
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	212	119	185	108	218	75	730	180	174	1111	28
Arrive On Green	0.10	0.19	0.19	0.10	0.20	0.20	0.04	0.26	0.26	0.10	0.31	0.31
Sat Flow, veh/h	1781	1126	631	1781	554	1115	1781	2824	698	1781	3541	90
Grp Volume(v), veh/h	93	0	142	112	0	235	40	334	330	186	433	452
Grp Sat Flow(s),veh/h/ln	1781	0	1757	1781	0	1670	1781	1777	1745	1781	1777	1854
Q Serve(g_s), s	2.5	0.0	3.7	3.1	0.0	6.8	1.1	8.8	8.9	5.0	11.3	11.3
Cycle Q Clear(g_c), s	2.5	0.0	3.7	3.1	0.0	6.8	1.1	8.8	8.9	5.0	11.3	11.3
Prop In Lane	1.00		0.36	1.00		0.67	1.00		0.40	1.00		0.05
Lane Grp Cap(c), veh/h	173	0	331	185	0	326	75	460	451	174	558	582
V/C Ratio(X)	0.54	0.00	0.43	0.61	0.00	0.72	0.53	0.73	0.73	1.07	0.78	0.78
Avail Cap(c_a), veh/h	904	0	892	869	0	847	174	624	613	174	624	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	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	22.0	0.0	18.4	22.0	0.0	19.3	24.0	17.3	17.4	23.1	15.9	15.9
Incr Delay (d2), s/veh	2.6	0.0	0.9	3.2	0.0	3.0	5.7	2.8	2.9	88.1	5.5	5.3
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	1.1	0.0	1.4	1.3	0.0	2.6	0.6	3.5	3.5	6.2	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	19.2	25.1	0.0	22.3	29.7	20.1	20.3	111.2	21.5	21.3
LnGrp LOS	C	A	B	C	A	C	C	C	C	F	C	C
Approach Vol, veh/h		235			347			704			1071	
Approach Delay, s/veh		21.4			23.2			20.7			37.0	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	17.8	9.8	14.2	6.7	20.6	9.5	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	25.0	26.0	5.0	18.0	26.0	26.0
Max Q Clear Time (g_c+I1), s	7.0	10.9	5.1	5.7	3.1	13.3	4.5	8.8
Green Ext Time (p_c), s	0.0	2.4	0.3	0.7	0.0	2.3	0.2	1.3

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1352	2	74	1302	77	11	7	109	157	10	15
Future Volume (veh/h)	10	1352	2	74	1302	77	11	7	109	157	10	15
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	11	1470	2	80	1415	84	12	8	0	171	11	16
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	2196	3	85	2150	1002	72	33		233	11	239
Arrive On Green	0.05	0.60	0.63	0.05	0.60	0.63	0.18	0.15	0.00	0.18	0.15	0.15
Sat Flow, veh/h	1781	3641	5	1781	3554	1585	133	216	1585	1128	73	1585
Grp Volume(v), veh/h	11	717	755	80	1415	84	20	0	0	182	0	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	349	0	1585	1200	0	1585
Q Serve(g_s), s	0.7	29.6	29.6	4.9	28.8	2.3	0.2	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.7	29.6	29.6	4.9	28.8	2.3	16.9	0.0	0.0	16.7	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.60		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	81	1071	1127	85	2150	1002	114	0		277	0	239
V/C Ratio(X)	0.14	0.67	0.67	0.95	0.66	0.08	0.17	0.00		0.66	0.00	0.07
Avail Cap(c_a), veh/h	81	1071	1127	97	2150	1002	303	0		451	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	14.5	14.5	52.3	14.3	7.9	40.4	0.0	0.0	45.4	0.0	40.1
Incr Delay (d2), s/veh	0.8	3.3	3.2	69.9	1.6	0.2	0.7	0.0	0.0	2.6	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	0.3	12.1	12.7	3.8	11.3	0.8	0.5	0.0	0.0	4.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	17.9	17.7	122.1	15.9	8.0	41.1	0.0	0.0	48.0	0.0	40.2
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1483			1579			20			198	
Approach Delay, s/veh		18.0			20.8			41.1			47.4	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	74.2		23.6	12.0	74.4		23.6
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0
Max Q Clear Time (g_c+I1), s	7.9	32.6		18.7	3.7	31.8		18.9
Green Ext Time (p_c), s	0.0	11.6		0.8	0.0	12.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	1142	71	20	1067	24	103	24	15	120	15	269
Future Volume (veh/h)	214	1142	71	20	1067	24	103	24	15	120	15	269
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	233	1241	77	22	1160	26	112	26	16	130	16	292
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	240	1689	105	74	2411	54	55	33	21	300	37	298
Arrive On Green	0.07	0.50	0.52	0.04	0.47	0.49	0.06	0.03	0.03	0.21	0.19	0.19
Sat Flow, veh/h	3456	3399	211	1781	5139	115	1781	1084	667	1594	196	1585
Grp Volume(v), veh/h	233	648	670	22	768	418	112	0	42	146	0	292
Grp Sat Flow(s),veh/h/ln	1728	1777	1832	1781	1702	1850	1781	0	1750	1791	0	1585
Q Serve(g_s), s	8.1	34.6	34.7	1.4	18.6	18.5	3.7	0.0	2.9	8.5	0.0	22.0
Cycle Q Clear(g_c), s	8.1	34.6	34.7	1.4	18.6	18.5	3.7	0.0	2.9	8.5	0.0	22.0
Prop In Lane	1.00		0.11	1.00		0.06	1.00		0.38	0.89		1.00
Lane Grp Cap(c), veh/h	240	883	911	74	1597	868	55	0	54	337	0	298
V/C Ratio(X)	0.97	0.73	0.74	0.30	0.48	0.48	2.04	0.00	0.78	0.43	0.00	0.98
Avail Cap(c_a), veh/h	346	883	911	104	1597	868	386	0	379	370	0	328
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	55.7	23.9	23.8	55.8	21.8	21.8	56.6	0.0	57.7	41.8	0.0	48.5
Incr Delay (d2), s/veh	33.7	5.4	5.3	2.2	1.0	1.9	480.4	0.0	20.8	0.9	0.0	42.7
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	4.6	15.5	15.9	0.7	7.6	8.4	9.0	0.0	1.6	3.8	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.4	29.3	29.0	58.0	22.9	23.7	537.0	0.0	78.6	42.7	0.0	91.2
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1551			1208			154			438	
Approach Delay, s/veh		38.2			23.8			412.0			75.1	
Approach LOS		D			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	67.6		29.8	15.3	64.2		10.7				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0				
Max Green Setting (Gmax), s	10.0	36.1		* 28	15.0	31.1		29.0				
Max Q Clear Time (g_c+I1), s	14.4	37.6		25.0	11.1	21.6		5.9				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.3	5.2		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			55.0									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	633	33	670	634	122	33	216	610	114	116	79
Future Volume (veh/h)	137	633	33	670	634	122	33	216	610	114	116	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	149	688	36	728	689	133	36	235	663	124	126	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	178	1179	526	866	1453	280	56	351	695	160	472	400
Arrive On Green	0.10	0.33	0.33	0.25	0.49	0.49	0.03	0.19	0.19	0.09	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	3456	2971	573	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	149	688	36	728	412	410	36	235	663	124	126	86
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1767	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.5	22.5	1.9	28.0	21.6	21.6	2.8	16.3	21.4	9.5	7.6	6.0
Cycle Q Clear(g_c), s	11.5	22.5	1.9	28.0	21.6	21.6	2.8	16.3	21.4	9.5	7.6	6.0
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1179	526	866	869	864	56	351	695	160	472	400
V/C Ratio(X)	0.84	0.58	0.07	0.84	0.47	0.47	0.65	0.67	0.95	0.78	0.27	0.21
Avail Cap(c_a), veh/h	178	1179	526	889	869	864	153	389	727	216	472	400
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	61.9	38.7	23.5	49.8	23.8	23.8	67.0	52.8	37.9	62.4	41.9	41.4
Incr Delay (d2), s/veh	27.9	2.1	0.3	7.1	1.9	1.9	11.8	3.8	22.3	11.7	0.3	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	6.6	10.2	0.9	13.0	9.6	9.5	1.5	8.1	10.4	4.8	3.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.8	40.9	23.8	56.9	25.6	25.7	78.9	56.6	60.2	74.0	42.2	41.6
LnGrp LOS	F	D	C	E	C	C	E	E	E	E	D	D
Approach Vol, veh/h		873			1550			934			336	
Approach Delay, s/veh		48.5			40.3			60.0			53.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	51.4	8.4	40.3	18.0	73.4	17.4	31.2
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	31.0	25.5	5.8	10.6	14.5	24.6	12.5	24.4
Green Ext Time (p_c), s	1.4	4.2	0.0	0.9	0.0	6.2	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	599	26	33	501	24	13	3	29	0	31	16
Future Volume (veh/h)	8	599	26	33	501	24	13	3	29	0	31	16
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	9	651	28	36	545	26	14	3	32	0	34	17
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	1340	57	744	1342	64	112	13	63	0	88	44
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.00	0.07	0.07
Sat Flow, veh/h	6	1768	75	761	1771	84	274	177	851	0	1176	588
Grp Volume(v), veh/h	688	0	0	36	0	571	49	0	0	0	0	51
Grp Sat Flow(s),veh/h/ln	1849	0	0	761	0	1855	1302	0	0	0	0	1764
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.5	0.7	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	7.2	0.0	0.0	0.5	0.0	5.5	2.1	0.0	0.0	0.0	0.0	1.4
Prop In Lane	0.01		0.04	1.00		0.05	0.29		0.65	0.00		0.33
Lane Grp Cap(c), veh/h	1474	0	0	744	0	1407	188	0	0	0	0	131
V/C Ratio(X)	0.47	0.00	0.00	0.05	0.00	0.41	0.26	0.00	0.00	0.00	0.00	0.39
Avail Cap(c_a), veh/h	1474	0	0	744	0	1407	765	0	0	0	0	799
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	1.5	0.0	2.1	22.7	0.0	0.0	0.0	0.0	22.4
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.0	0.9	0.7	0.0	0.0	0.0	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	1.0	0.0	0.0	0.0	0.0	0.8	0.6	0.0	0.0	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.0	0.0	1.7	0.0	3.0	23.4	0.0	0.0	0.0	0.0	24.3
LnGrp LOS	A	A	A	A	A	A	C	A	A	A	A	C
Approach Vol, veh/h		688			607			49			51	
Approach Delay, s/veh		3.4			2.9			23.4			24.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		7.8		43.0		7.8				
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0				
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0				
Max Q Clear Time (g_c+I1), s		9.2		4.1		7.5		3.4				
Green Ext Time (p_c), s		5.5		0.2		4.5		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			4.7
HCM 6th LOS			A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	16.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	521	591	120	132	29
Future Vol, veh/h	48	521	591	120	132	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	52	566	642	130	143	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	772	0	-	0	1377	707
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	843	-	-	-	160	435
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	509	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	843	-	-	-	146	435
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	509	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	141
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	843	-	-	-	166
HCM Lane V/C Ratio	0.062	-	-	-	1.054
HCM Control Delay (s)	9.6	0	-	-	141
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	8.7

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	382	29	126	362	3	39	10	85	8	12	14
Future Vol, veh/h	13	382	29	126	362	3	39	10	85	8	12	14
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	-	-	-	-	-	-	-	-	-	-	-	-
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	14	415	32	137	393	3	42	11	92	9	13	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	396	0	0	447	0	0	1142	1129	431	1180	1144	395
Stage 1	-	-	-	-	-	-	459	459	-	669	669	-
Stage 2	-	-	-	-	-	-	683	670	-	511	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1163	-	-	1113	-	-	177	204	624	167	200	654
Stage 1	-	-	-	-	-	-	582	566	-	447	456	-
Stage 2	-	-	-	-	-	-	439	455	-	545	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1163	-	-	1113	-	-	141	169	624	118	166	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	169	-	118	166	-
Stage 1	-	-	-	-	-	-	573	557	-	440	384	-
Stage 2	-	-	-	-	-	-	349	383	-	448	548	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.2	30.3	25.7
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	284	1163	-	-	1113	-	-	211
HCM Lane V/C Ratio	0.513	0.012	-	-	0.123	-	-	0.175
HCM Control Delay (s)	30.3	8.1	0	-	8.7	0	-	25.7
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	2.7	0	-	-	0.4	-	-	0.6

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	399	81	15	389	29	50
Future Vol, veh/h	399	81	15	389	29	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	434	88	16	423	32	54
Number of Lanes	1	0	0	1	1	0

Approach	EB		WB		NB	
Opposing Approach	WB		EB			
Opposing Lanes	1		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		1	
HCM Control Delay	16.1		14.2		9.7	
HCM LOS	C		B		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	37%	0%	4%
Vol Thru, %	0%	83%	96%
Vol Right, %	63%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	79	480	404
LT Vol	29	0	15
Through Vol	0	399	389
RT Vol	50	81	0
Lane Flow Rate	86	522	439
Geometry Grp	1	1	1
Degree of Util (X)	0.136	0.661	0.578
Departure Headway (Hd)	5.681	4.56	4.738
Convergence, Y/N	Yes	Yes	Yes
Cap	624	788	755
Service Time	3.781	2.615	2.799
HCM Lane V/C Ratio	0.138	0.662	0.581
HCM Control Delay	9.7	16.1	14.2
HCM Lane LOS	A	C	B
HCM 95th-tile Q	0.5	5.1	3.8

Intersection	
Intersection Delay, s/veh	31.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	91	16	74	0	177	0	427	161	157	102	0
Future Vol, veh/h	143	91	16	74	0	177	0	427	161	157	102	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	155	99	17	80	0	192	0	464	175	171	111	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	21.5	19.5	44.7	22
HCM LOS	C	C	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	57%	29%	61%
Vol Thru, %	100%	0%	36%	0%	39%
Vol Right, %	0%	100%	6%	71%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	427	161	250	251	259
LT Vol	0	0	143	74	157
Through Vol	427	0	91	0	102
RT Vol	0	161	16	177	0
Lane Flow Rate	464	175	272	273	282
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.952	0.324	0.588	0.56	0.605
Departure Headway (Hd)	7.384	6.665	7.791	7.392	7.734
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	492	539	462	486	465
Service Time	5.139	4.419	5.855	5.458	5.8
HCM Lane V/C Ratio	0.943	0.325	0.589	0.562	0.606
HCM Control Delay	56.8	12.6	21.5	19.5	22
HCM Lane LOS	F	B	C	C	C
HCM 95th-tile Q	11.8	1.4	3.7	3.4	3.9

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↱			↰			↱	
Traffic Vol, veh/h	0	0	0	262	118	51	8	73	0	0	112	27
Future Vol, veh/h	0	0	0	262	118	51	8	73	0	0	112	27
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	285	128	55	9	79	0	0	122	29
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.5	9.1	9.5
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	70%	81%
Vol Right, %	0%	0%	30%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	262	169	139
LT Vol	8	262	0	0
Through Vol	73	0	118	112
RT Vol	0	0	51	27
Lane Flow Rate	88	285	184	151
Geometry Grp	2	7	7	2
Degree of Util (X)	0.129	0.446	0.251	0.212
Departure Headway (Hd)	5.272	5.633	4.919	5.052
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	677	638	727	709
Service Time	3.327	3.387	2.672	3.098
HCM Lane V/C Ratio	0.13	0.447	0.253	0.213
HCM Control Delay	9.1	12.9	9.3	9.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2.3	1	0.8

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	628	8	85	676	69	0	0	33	48	0	55
Future Vol, veh/h	47	628	8	85	676	69	0	0	33	48	0	55
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	51	683	9	92	735	75	0	0	36	52	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	810	0	0	692	0	0	1342	1784	346	1401	1751	405
Stage 1	-	-	-	-	-	-	790	790	-	957	957	-
Stage 2	-	-	-	-	-	-	552	994	-	444	794	-
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	812	-	-	899	-	-	110	81	650	100	85	595
Stage 1	-	-	-	-	-	-	350	400	-	277	334	-
Stage 2	-	-	-	-	-	-	486	321	-	563	398	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	812	-	-	899	-	-	78	59	650	75	62	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	145	-	170	151	-
Stage 1	-	-	-	-	-	-	314	359	-	249	271	-
Stage 2	-	-	-	-	-	-	355	260	-	478	357	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.5	10.9	26.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	812	-	-	899	-	-	275
HCM Lane V/C Ratio	0.055	0.063	-	-	0.103	-	-	0.407
HCM Control Delay (s)	10.9	9.7	0.4	-	9.5	0.7	-	26.8
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.3	-	-	1.9

Intersection	
Intersection Delay, s/veh	99.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	627	81	205	617	57	73	65	162	63	90	48
Future Vol, veh/h	66	627	81	205	617	57	73	65	162	63	90	48
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	682	88	223	671	62	79	71	176	68	98	52
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	135.1	104.5	29.6	45.5
HCM LOS	F	F	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	53%	0%	100%	0%	0%	100%	0%	0%	31%
Vol Thru, %	47%	0%	0%	100%	72%	0%	100%	78%	45%
Vol Right, %	0%	100%	0%	0%	28%	0%	0%	22%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	162	66	418	290	205	411	263	201
LT Vol	73	0	66	0	0	205	0	0	63
Through Vol	65	0	0	418	209	0	411	206	90
RT Vol	0	162	0	0	81	0	0	57	48
Lane Flow Rate	150	176	72	454	315	223	447	286	218
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.512	0.555	0.222	1.341	0.913	0.668	1.278	0.804	0.74
Departure Headway (Hd)	13.45	12.441	11.711	11.183	10.976	11.407	10.878	10.718	13.075
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	270	292	308	327	334	319	340	340	280
Service Time	11.15	10.141	9.411	8.883	8.676	9.107	8.578	8.418	10.775
HCM Lane V/C Ratio	0.556	0.603	0.234	1.388	0.943	0.699	1.315	0.841	0.779
HCM Control Delay	29.5	29.6	17.7	203	64	34.3	177	45.6	45.5
HCM Lane LOS	D	D	C	F	F	D	F	E	E
HCM 95th-tile Q	2.7	3.1	0.8	21.3	9	4.5	19.6	6.8	5.3

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	0	848	40	121	845	19	25	1	98	10	3	15
Future Vol, veh/h	0	848	40	121	845	19	25	1	98	10	3	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	0	922	43	132	918	21	27	1	107	11	3	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	965	0	0	1669	2147	483	1655	2158	470
Stage 1	-	-	-	-	-	-	944	944	-	1193	1193	-
Stage 2	-	-	-	-	-	-	725	1203	-	462	965	-
Critical Hdwy	-	-	-	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	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	709	-	-	63	48	530	64	47	540
Stage 1	0	-	-	-	-	-	282	339	-	198	258	-
Stage 2	0	-	-	-	-	-	383	256	-	549	331	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	709	-	-	41	29	530	35	29	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	109	-	125	93	-
Stage 1	-	-	-	-	-	-	282	339	-	198	157	-
Stage 2	-	-	-	-	-	-	222	156	-	437	331	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.8	13.5	26.2
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	530	-	-	709	-	-	200
HCM Lane V/C Ratio	0.201	-	-	0.186	-	-	0.152
HCM Control Delay (s)	13.5	-	-	11.2	1.7	-	26.2
HCM Lane LOS	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	-	-	0.7	-	-	0.5

Intersection	
Int Delay, s/veh	24.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	866	14	178	962	7	27	0	207	0	0	12
Future Vol, veh/h	60	866	14	178	962	7	27	0	207	0	0	12
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	65	941	15	193	1046	8	29	0	225	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1054	0	0	956	0	0	1988	2519	478	2037	2522	527
Stage 1	-	-	-	-	-	-	1079	1079	-	1436	1436	-
Stage 2	-	-	-	-	-	-	909	1440	-	601	1086	-
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	656	-	-	715	-	-	36	28	534	33	27	496
Stage 1	-	-	-	-	-	-	233	293	-	140	197	-
Stage 2	-	-	-	-	-	-	296	196	-	454	291	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	656	-	-	715	-	-	~ 14	8	534	8	7	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	33	3	-	13	31	-
Stage 1	-	-	-	-	-	-	184	231	-	110	69	-
Stage 2	-	-	-	-	-	-	100	68	-	207	229	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	4.2	219.4	12.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	194	656	-	-	715	-	-	496
HCM Lane V/C Ratio	1.311	0.099	-	-	0.271	-	-	0.026
HCM Control Delay (s)	219.4	11.1	1	-	11.9	2.8	-	12.5
HCM Lane LOS	F	B	A	-	B	A	-	B
HCM 95th %tile Q(veh)	14.2	0.3	-	-	1.1	-	-	0.1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	489	367	481	292	672	251
Future Volume (veh/h)	489	367	481	292	672	251
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	532	399	523	317	730	0
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	602	1721	879	392	1349	
Arrive On Green	0.17	0.48	0.25	0.25	0.39	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	532	399	523	317	730	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	10.8	4.7	9.3	13.5	11.7	0.0
Cycle Q Clear(g_c), s	10.8	4.7	9.3	13.5	11.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	602	1721	879	392	1349	
V/C Ratio(X)	0.88	0.23	0.59	0.81	0.54	
Avail Cap(c_a), veh/h	602	1882	1040	464	1349	
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	0.00
Uniform Delay (d), s/veh	28.9	10.7	23.8	25.4	16.9	0.0
Incr Delay (d2), s/veh	14.5	0.1	0.7	8.8	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	5.5	1.7	3.8	5.8	4.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.4	10.8	24.5	34.2	18.5	0.0
LnGrp LOS	D	B	C	C	B	
Approach Vol, veh/h		931	840		730	
Approach Delay, s/veh		29.5	28.2		18.5	
Approach LOS		C	C		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.2		32.5	17.0	22.2
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				6.7		13.7	12.8	15.5
Green Ext Time (p_c), s				2.8		2.5	0.0	2.3

Intersection Summary			
HCM 6th Ctrl Delay			25.8
HCM 6th LOS			C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	176	43	44	217	85	108	583	53	216	831	55
Future Volume (veh/h)	142	176	43	44	217	85	108	583	53	216	831	55
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	154	191	47	48	236	92	117	634	58	235	903	60
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	391	96	123	285	111	149	839	77	280	1110	74
Arrive On Green	0.12	0.27	0.27	0.07	0.22	0.22	0.08	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	1781	1449	357	1781	1281	499	1781	3292	301	1781	3382	225
Grp Volume(v), veh/h	154	0	238	48	0	328	117	342	350	235	474	489
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1781	0	1780	1781	1777	1816	1781	1777	1830
Q Serve(g_s), s	6.0	0.0	8.0	1.9	0.0	12.7	4.7	12.8	12.9	9.3	17.7	17.7
Cycle Q Clear(g_c), s	6.0	0.0	8.0	1.9	0.0	12.7	4.7	12.8	12.9	9.3	17.7	17.7
Prop In Lane	1.00		0.20	1.00		0.28	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	207	0	487	123	0	397	149	453	463	280	583	601
V/C Ratio(X)	0.74	0.00	0.49	0.39	0.00	0.83	0.78	0.75	0.76	0.84	0.81	0.81
Avail Cap(c_a), veh/h	641	0	650	616	0	616	195	543	555	352	701	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	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	30.9	0.0	22.2	32.2	0.0	26.8	32.5	24.8	24.9	29.6	22.2	22.2
Incr Delay (d2), s/veh	5.2	0.0	0.8	2.0	0.0	5.4	14.4	4.9	4.9	13.5	6.2	6.0
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	2.8	0.0	3.3	0.8	0.0	5.7	2.5	5.7	5.9	4.9	7.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	22.9	34.2	0.0	32.2	46.8	29.8	29.7	43.1	28.4	28.3
LnGrp LOS	D	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		392			376			809			1198	
Approach Delay, s/veh		28.1			32.4			32.2			31.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	22.9	9.5	24.0	10.5	28.2	12.9	20.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.3	22.1	25.0	26.0	7.9	28.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	11.3	14.9	3.9	10.0	6.7	19.7	8.0	14.7
Green Ext Time (p_c), s	0.2	2.5	0.1	1.2	0.0	4.0	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1392	2	72	1136	101	10	13	71	98	8	12
Future Volume (veh/h)	11	1392	2	72	1136	101	10	13	71	98	8	12
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	12	1513	2	78	1235	110	11	14	0	107	9	13
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	2343	3	84	2292	1065	60	50		170	9	175
Arrive On Green	0.05	0.64	0.67	0.05	0.64	0.67	0.14	0.11	0.00	0.14	0.11	0.11
Sat Flow, veh/h	1781	3642	5	1781	3554	1585	113	454	1585	964	81	1585
Grp Volume(v), veh/h	12	738	777	78	1235	110	25	0	0	116	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	567	0	1585	1045	0	1585
Q Serve(g_s), s	0.7	27.9	27.9	4.8	20.8	2.7	0.1	0.0	0.0	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.7	27.9	27.9	4.8	20.8	2.7	12.9	0.0	0.0	12.8	0.0	0.8
Prop In Lane	1.00		0.00	1.00		1.00	0.44		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	81	1143	1203	84	2292	1065	125	0		207	0	175
V/C Ratio(X)	0.15	0.65	0.65	0.93	0.54	0.10	0.20	0.00		0.56	0.00	0.07
Avail Cap(c_a), veh/h	81	1143	1203	97	2292	1065	389	0		439	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	12.0	12.0	52.2	10.6	6.4	43.9	0.0	0.0	47.8	0.0	43.9
Incr Delay (d2), s/veh	0.8	2.8	2.7	65.0	0.9	0.2	0.8	0.0	0.0	2.4	0.0	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	0.3	11.0	11.6	3.7	7.8	0.9	0.6	0.0	0.0	3.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	14.8	14.7	117.3	11.5	6.5	44.7	0.0	0.0	50.2	0.0	44.0
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1527			1423			25			129	
Approach Delay, s/veh		15.0			17.0			44.7			49.5	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	78.7		19.2	12.0	78.8		19.2				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	7.8	30.9		14.8	3.7	23.8		14.9				
Green Ext Time (p_c), s	0.0	12.5		0.5	0.0	12.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									
Notes												

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	1174	76	22	951	17	117	29	5	82	12	190
Future Volume (veh/h)	194	1174	76	22	951	17	117	29	5	82	12	190
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	211	1276	83	24	1034	18	127	32	5	89	13	207
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	223	1894	123	69	2755	48	75	67	10	213	31	216
Arrive On Green	0.06	0.56	0.58	0.04	0.53	0.56	0.07	0.04	0.04	0.16	0.14	0.14
Sat Flow, veh/h	3456	3388	220	1781	5168	90	1781	1579	247	1564	228	1585
Grp Volume(v), veh/h	211	668	691	24	681	371	127	0	37	102	0	207
Grp Sat Flow(s),veh/h/ln	1728	1777	1831	1781	1702	1854	1781	0	1826	1792	0	1585
Q Serve(g_s), s	7.9	34.5	34.6	1.7	15.2	15.2	5.5	0.0	2.6	6.7	0.0	16.9
Cycle Q Clear(g_c), s	7.9	34.5	34.6	1.7	15.2	15.2	5.5	0.0	2.6	6.7	0.0	16.9
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.14	0.87		1.00
Lane Grp Cap(c), veh/h	223	994	1024	69	1815	989	75	0	77	244	0	216
V/C Ratio(X)	0.95	0.67	0.67	0.35	0.38	0.38	1.68	0.00	0.48	0.42	0.00	0.96
Avail Cap(c_a), veh/h	478	994	1024	96	1815	989	329	0	337	356	0	315
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	60.6	20.2	20.1	60.9	17.7	17.7	60.7	0.0	60.8	50.2	0.0	55.8
Incr Delay (d2), s/veh	17.8	3.6	3.6	3.0	0.6	1.1	319.5	0.0	4.5	1.1	0.0	32.6
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	4.0	15.0	15.4	0.8	6.1	6.8	9.1	0.0	1.3	3.1	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.4	23.9	23.7	63.9	18.3	18.8	380.3	0.0	65.4	51.3	0.0	88.4
LnGrp LOS	E	C	C	E	B	B	F	A	E	D	A	F
Approach Vol, veh/h		1570			1076			164			309	
Approach Delay, s/veh		31.1			19.5			309.2			76.2	
Approach LOS		C			B			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	80.7		24.9	15.4	77.3		12.4
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0
Max Green Setting (Gmax), s	10.0	47.1		* 29	21.0	36.1		27.0
Max Q Clear Time (g_c+I1), s	4.7	37.5		19.9	10.9	18.2		7.5
Green Ext Time (p_c), s	0.0	6.0		0.8	0.5	6.8		0.8

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	650	32	596	592	101	39	239	625	115	102	73
Future Volume (veh/h)	144	650	32	596	592	101	39	239	625	115	102	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	157	707	35	648	643	110	42	260	679	125	111	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	178	1149	513	866	1459	249	64	366	708	161	479	406
Arrive On Green	0.10	0.32	0.32	0.25	0.48	0.48	0.04	0.20	0.20	0.09	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	3456	3035	518	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	157	707	35	648	376	377	42	260	679	125	111	79
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1777	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.2	23.5	1.8	24.2	19.5	19.6	3.3	18.2	23.0	9.6	6.6	5.5
Cycle Q Clear(g_c), s	12.2	23.5	1.8	24.2	19.5	19.6	3.3	18.2	23.0	9.6	6.6	5.5
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1149	513	866	854	854	64	366	708	161	479	406
V/C Ratio(X)	0.88	0.62	0.07	0.75	0.44	0.44	0.65	0.71	0.96	0.78	0.23	0.19
Avail Cap(c_a), veh/h	178	1149	513	889	854	854	153	389	727	216	479	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	40.0	23.8	48.4	24.0	24.0	66.6	52.6	37.5	62.3	41.2	40.8
Incr Delay (d2), s/veh	36.4	2.5	0.3	3.4	1.6	1.7	10.6	5.6	23.6	11.9	0.2	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	7.3	10.7	0.9	10.9	8.7	8.7	1.7	9.1	11.3	4.9	3.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.5	42.5	24.1	51.8	25.6	25.6	77.3	58.2	61.1	74.2	41.4	41.0
LnGrp LOS	F	D	C	D	C	C	E	E	E	E	D	D
Approach Vol, veh/h		899			1401			981			315	
Approach Delay, s/veh		51.5			37.7			61.0			54.3	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	50.2	9.1	40.8	18.0	72.2	17.5	32.3
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	27.2	26.5	6.3	9.6	15.2	22.5	12.6	26.0
Green Ext Time (p_c), s	1.8	4.2	0.0	0.8	0.0	5.5	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	49.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	513	32	16	521	32	10	2	10	14	12	16
Future Volume (veh/h)	10	513	32	16	521	32	10	2	10	14	12	16
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	11	558	35	17	566	35	11	2	11	15	13	17
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	1325	82	820	1340	83	145	14	46	127	32	38
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	9	1723	107	824	1743	108	650	230	745	499	517	616
Grp Volume(v), veh/h	604	0	0	17	0	601	24	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1839	0	0	824	0	1851	1625	0	0	1632	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.2	0.0	5.6	0.6	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.02		0.06	1.00		0.06	0.46		0.46	0.33		0.38
Lane Grp Cap(c), veh/h	1487	0	0	820	0	1423	205	0	0	196	0	0
V/C Ratio(X)	0.41	0.00	0.00	0.02	0.00	0.42	0.12	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1487	0	0	820	0	1423	802	0	0	827	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.0	0.0	0.0	1.4	0.0	2.0	22.4	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.6	0.0	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	0.6	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.8	0.0	0.0	1.4	0.0	2.9	22.6	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		604			618			24			45	
Approach Delay, s/veh		2.8			2.9			22.6			23.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		7.1		43.0		7.1
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0
Max Q Clear Time (g_c+I1), s		7.6		2.6		7.6		3.3
Green Ext Time (p_c), s		4.6		0.1		4.7		0.1

Intersection Summary	
HCM 6th Ctrl Delay	3.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	16

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	552	565	110	132	31
Future Vol, veh/h	45	552	565	110	132	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	49	600	614	120	143	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	734	0	-	0	1372	674
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	698	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	871	-	-	-	161	455
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	494	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	871	-	-	-	147	455
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	494	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.7		0		138	
HCM LOS					F	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	871	-	-	-	169
HCM Lane V/C Ratio	0.056	-	-	-	1.048
HCM Control Delay (s)	9.4	0	-	-	138
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	8.7

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	401	35	92	367	5	24	10	108	7	3	11
Future Vol, veh/h	11	401	35	92	367	5	24	10	108	7	3	11
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	-	-	-	-	-	-	-	-	-	-	-	-
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	12	436	38	100	399	5	26	11	117	8	3	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	474	0	0	1088	1083	455	1145	1100	402
Stage 1	-	-	-	-	-	-	479	479	-	602	602	-
Stage 2	-	-	-	-	-	-	609	604	-	543	498	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1155	-	-	1088	-	-	193	217	605	177	212	648
Stage 1	-	-	-	-	-	-	568	555	-	486	489	-
Stage 2	-	-	-	-	-	-	482	488	-	524	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1155	-	-	1088	-	-	168	189	605	123	184	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	189	-	123	184	-
Stage 1	-	-	-	-	-	-	560	547	-	479	431	-
Stage 2	-	-	-	-	-	-	414	430	-	408	536	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	20.9	22.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	379	1155	-	-	1088	-	-	233
HCM Lane V/C Ratio	0.407	0.01	-	-	0.092	-	-	0.098
HCM Control Delay (s)	20.9	8.1	0	-	8.6	0	-	22.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.9	0	-	-	0.3	-	-	0.3

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	360	45	39	384	52	93
Future Vol, veh/h	360	45	39	384	52	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	391	49	42	417	57	101
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	15.3	16.5	10.7
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	9%
Vol Thru, %	0%	89%	91%
Vol Right, %	64%	11%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	145	405	423
LT Vol	52	0	39
Through Vol	0	360	384
RT Vol	93	45	0
Lane Flow Rate	158	440	460
Geometry Grp	1	1	1
Degree of Util (X)	0.251	0.605	0.639
Departure Headway (Hd)	5.743	4.95	5.005
Convergence, Y/N	Yes	Yes	Yes
Cap	626	731	726
Service Time	3.781	2.962	3.016
HCM Lane V/C Ratio	0.252	0.602	0.634
HCM Control Delay	10.7	15.3	16.5
HCM Lane LOS	B	C	C
HCM 95th-tile Q	1	4.1	4.6

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	47	9	62	0	188	0	327	182	166	237	0
Future Vol, veh/h	41	47	9	62	0	188	0	327	182	166	237	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	51	10	67	0	204	0	355	198	180	258	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	12.7	15.8	17.8	28
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	42%	25%	41%
Vol Thru, %	100%	0%	48%	0%	59%
Vol Right, %	0%	100%	9%	75%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	327	182	97	250	403
LT Vol	0	0	41	62	166
Through Vol	327	0	47	0	237
RT Vol	0	182	9	188	0
Lane Flow Rate	355	198	105	272	438
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.656	0.326	0.22	0.493	0.774
Departure Headway (Hd)	6.648	5.933	7.523	6.53	6.359
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	544	603	476	552	569
Service Time	4.402	3.687	5.598	4.584	4.409
HCM Lane V/C Ratio	0.653	0.328	0.221	0.493	0.77
HCM Control Delay	21.3	11.6	12.7	15.8	28
HCM Lane LOS	C	B	B	C	D
HCM 95th-tile Q	4.7	1.4	0.8	2.7	7.1

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	251	128	61	2	62	0	0	75	46
Future Vol, veh/h	0	0	0	251	128	61	2	62	0	0	75	46
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	273	139	66	2	67	0	0	82	50
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11	8.9	9
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	100%	0%	0%
Vol Thru, %	97%	0%	68%	62%
Vol Right, %	0%	0%	32%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	251	189	121
LT Vol	2	251	0	0
Through Vol	62	0	128	75
RT Vol	0	0	61	46
Lane Flow Rate	70	273	205	132
Geometry Grp	2	7	7	2
Degree of Util (X)	0.101	0.419	0.274	0.179
Departure Headway (Hd)	5.222	5.532	4.803	4.907
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	685	649	746	730
Service Time	3.263	3.273	2.544	2.941
HCM Lane V/C Ratio	0.102	0.421	0.275	0.181
HCM Control Delay	8.9	12.2	9.4	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.1	1.1	0.6

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	32	565	13	81	589	79	6	1	46	32	0	35
Future Vol, veh/h	32	565	13	81	589	79	6	1	46	32	0	35
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	35	614	14	88	640	86	7	1	50	35	0	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	726	0	0	628	0	0	1187	1593	314	1237	1557	363
Stage 1	-	-	-	-	-	-	691	691	-	859	859	-
Stage 2	-	-	-	-	-	-	496	902	-	378	698	-
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	873	-	-	950	-	-	144	106	682	132	112	634
Stage 1	-	-	-	-	-	-	401	444	-	317	371	-
Stage 2	-	-	-	-	-	-	524	355	-	616	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	873	-	-	950	-	-	113	84	682	102	88	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	224	183	-	207	185	-
Stage 1	-	-	-	-	-	-	376	416	-	297	312	-
Stage 2	-	-	-	-	-	-	415	299	-	534	413	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.5	12.6	19.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	532	873	-	-	950	-	-	319
HCM Lane V/C Ratio	0.108	0.04	-	-	0.093	-	-	0.228
HCM Control Delay (s)	12.6	9.3	0.3	-	9.2	0.6	-	19.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.3	-	-	0.9

Intersection	
Intersection Delay, s/veh	84.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	572	76	238	627	56	66	60	157	59	92	39
Future Vol, veh/h	44	572	76	238	627	56	66	60	157	59	92	39
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	622	83	259	682	61	72	65	171	64	100	42
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	102.1	97.6	27.2	39.9
HCM LOS	F	F	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	52%	0%	100%	0%	0%	100%	0%	0%	31%
Vol Thru, %	48%	0%	0%	100%	71%	0%	100%	79%	48%
Vol Right, %	0%	100%	0%	0%	29%	0%	0%	21%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	157	44	381	267	238	418	265	190
LT Vol	66	0	44	0	0	238	0	0	59
Through Vol	60	0	0	381	191	0	418	209	92
RT Vol	0	157	0	0	76	0	0	56	39
Lane Flow Rate	137	171	48	414	290	259	454	288	207
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.462	0.53	0.146	1.204	0.826	0.75	1.254	0.783	0.692
Departure Headway (Hd)	13.091	12.086	11.504	10.977	10.767	10.933	10.405	10.25	12.792
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	277	300	314	336	339	334	354	354	285
Service Time	10.791	9.786	9.204	8.677	8.467	8.633	8.105	7.95	10.492
HCM Lane V/C Ratio	0.495	0.57	0.153	1.232	0.855	0.775	1.282	0.814	0.726
HCM Control Delay	26.6	27.6	16.2	149.3	48.7	40.2	165.8	41.6	39.9
HCM Lane LOS	D	D	C	F	E	E	F	E	E
HCM 95th-tile Q	2.3	2.9	0.5	17	7.2	5.8	19.4	6.5	4.7

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	738	52	169	873	21	25	1	95	3	5	15
Future Vol, veh/h	1	738	52	169	873	21	25	1	95	3	5	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	802	57	184	949	23	27	1	103	3	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	972	0	0	859	0	0	1678	2173	430	1733	2190	486
Stage 1	-	-	-	-	-	-	833	833	-	1329	1329	-
Stage 2	-	-	-	-	-	-	845	1340	-	404	861	-
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	705	-	-	778	-	-	62	46	573	56	45	527
Stage 1	-	-	-	-	-	-	329	382	-	163	222	-
Stage 2	-	-	-	-	-	-	324	220	-	594	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	705	-	-	778	-	-	34	22	573	27	22	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	82	-	108	71	-
Stage 1	-	-	-	-	-	-	328	381	-	163	107	-
Stage 2	-	-	-	-	-	-	144	106	-	484	370	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.5	12.7	27.9
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	705	-	-	778	-	-	182
HCM Lane V/C Ratio	0.18	0.002	-	-	0.236	-	-	0.137
HCM Control Delay (s)	12.7	10.1	-	-	11.1	2.1	-	27.9
HCM Lane LOS	B	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	0	-	-	0.9	-	-	0.5

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	871	2	175	896	10	17	0	141	8	1	9
Future Vol, veh/h	55	871	2	175	896	10	17	0	141	8	1	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	60	947	2	190	974	11	18	0	153	9	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	985	0	0	949	0	0	1936	2433	475	1954	2429	493
Stage 1	-	-	-	-	-	-	1068	1068	-	1360	1360	-
Stage 2	-	-	-	-	-	-	868	1365	-	594	1069	-
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	697	-	-	719	-	-	40	31	536	38	32	522
Stage 1	-	-	-	-	-	-	237	296	-	156	215	-
Stage 2	-	-	-	-	-	-	314	214	-	458	296	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	697	-	-	719	-	-	~ 18	11	536	13	11	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	60	27	-	64	43	-
Stage 1	-	-	-	-	-	-	194	242	-	128	89	-
Stage 2	-	-	-	-	-	-	126	89	-	268	242	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	4	34.2	45.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	289	697	-	-	719	-	-	109
HCM Lane V/C Ratio	0.594	0.086	-	-	0.265	-	-	0.179
HCM Control Delay (s)	34.2	10.6	0.9	-	11.8	2.5	-	45.1
HCM Lane LOS	D	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	3.5	0.3	-	-	1.1	-	-	0.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	427	427	600	429	462	440
Future Volume (veh/h)	427	427	600	429	462	440
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	464	464	652	466	502	0
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	551	1786	1004	448	1301	
Arrive On Green	0.16	0.50	0.28	0.28	0.38	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	464	464	652	466	502	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.7	5.6	12.0	21.0	7.9	0.0
Cycle Q Clear(g_c), s	9.7	5.6	12.0	21.0	7.9	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	551	1786	1004	448	1301	
V/C Ratio(X)	0.84	0.26	0.65	1.04	0.39	
Avail Cap(c_a), veh/h	581	1816	1004	448	1301	
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	0.00
Uniform Delay (d), s/veh	30.3	10.6	23.4	26.7	16.9	0.0
Incr Delay (d2), s/veh	10.4	0.1	1.5	53.6	0.9	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	4.7	2.0	5.0	14.1	3.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.7	10.7	24.9	80.3	17.8	0.0
LnGrp LOS	D	B	C	F	B	
Approach Vol, veh/h		928	1118		502	
Approach Delay, s/veh		25.7	48.0		17.8	
Approach LOS		C	D		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				41.9		32.5	16.4	25.5
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				7.6		9.9	11.7	23.0
Green Ext Time (p_c), s				3.3		1.7	0.2	0.0

Intersection Summary		
HCM 6th Ctrl Delay		33.9
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	38	67	123	62	87	151	733	29	123	624	156
Future Volume (veh/h)	125	38	67	123	62	87	151	733	29	123	624	156
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	41	73	134	67	95	164	797	32	134	678	170
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	87	155	205	100	142	183	1080	43	167	847	212
Arrive On Green	0.12	0.14	0.14	0.12	0.14	0.14	0.10	0.31	0.31	0.09	0.30	0.30
Sat Flow, veh/h	1781	603	1074	1781	700	992	1781	3482	140	1781	2815	705
Grp Volume(v), veh/h	136	0	114	134	0	162	164	407	422	134	428	420
Grp Sat Flow(s),veh/h/ln	1781	0	1677	1781	0	1692	1781	1777	1845	1781	1777	1743
Q Serve(g_s), s	3.9	0.0	3.3	3.8	0.0	4.8	4.9	10.9	10.9	3.9	11.8	11.9
Cycle Q Clear(g_c), s	3.9	0.0	3.3	3.8	0.0	4.8	4.9	10.9	10.9	3.9	11.8	11.9
Prop In Lane	1.00		0.64	1.00		0.59	1.00		0.08	1.00		0.40
Lane Grp Cap(c), veh/h	207	0	242	205	0	242	183	551	572	167	535	525
V/C Ratio(X)	0.66	0.00	0.47	0.65	0.00	0.67	0.89	0.74	0.74	0.80	0.80	0.80
Avail Cap(c_a), veh/h	867	0	816	834	0	792	183	632	656	167	615	604
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	22.6	0.0	21.0	22.6	0.0	21.7	23.7	16.5	16.5	23.7	17.2	17.2
Incr Delay (d2), s/veh	3.5	0.0	1.4	3.5	0.0	3.2	38.4	3.9	3.8	24.1	6.6	6.7
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	1.7	0.0	1.3	1.7	0.0	2.0	3.8	4.5	4.6	2.6	5.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	22.4	26.1	0.0	24.9	62.0	20.4	20.3	47.8	23.8	23.9
LnGrp LOS	C	A	C	C	A	C	E	C	C	D	C	C
Approach Vol, veh/h		250			296			993			982	
Approach Delay, s/veh		24.4			25.4			27.2			27.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	21.1	10.6	12.2	10.0	20.6	10.7	12.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	25.0	26.0	5.5	18.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	5.9	12.9	5.8	5.3	6.9	13.9	5.9	6.8
Green Ext Time (p_c), s	0.0	2.6	0.3	0.6	0.0	2.2	0.3	0.8

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1219	1	57	1385	136	5	21	132	169	7	18
Future Volume (veh/h)	15	1219	1	57	1385	136	5	21	132	169	7	18
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	16	1325	1	62	1505	148	5	23	0	184	8	20
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	1771	1	75	1715	808	39	137		172	5	432
Arrive On Green	0.05	0.49	0.51	0.04	0.48	0.51	0.30	0.27	0.00	0.30	0.27	0.27
Sat Flow, veh/h	1781	3644	3	1781	3554	1585	0	501	1585	396	17	1585
Grp Volume(v), veh/h	16	646	680	62	1505	148	28	0	0	192	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1870	1781	1777	1585	501	0	1585	413	0	1585
Q Serve(g_s), s	1.0	32.3	32.3	3.8	41.8	5.6	0.0	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.0	32.3	32.3	3.8	41.8	5.6	33.0	0.0	0.0	33.0	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.18		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	81	863	909	75	1715	808	189	0		188	0	432
V/C Ratio(X)	0.20	0.75	0.75	0.82	0.88	0.18	0.15	0.00		1.02	0.00	0.05
Avail Cap(c_a), veh/h	81	863	909	97	1715	808	189	0		188	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	22.8	22.8	52.3	25.5	14.6	31.8	0.0	0.0	45.2	0.0	29.5
Incr Delay (d2), s/veh	1.2	5.9	5.6	33.9	6.7	0.5	0.4	0.0	0.0	71.1	0.0	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	0.5	14.4	15.1	2.4	18.4	2.1	0.5	0.0	0.0	8.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	28.7	28.4	86.2	32.2	15.1	32.1	0.0	0.0	116.3	0.0	29.5
LnGrp LOS	D	C	C	F	C	B	C	A		F	A	C
Approach Vol, veh/h		1342			1715			28			212	
Approach Delay, s/veh		28.9			32.7			32.1			108.1	
Approach LOS		C			C			C			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	61.4		37.0	12.0	61.0		37.0				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	6.8	35.3		35.0	4.0	44.8		35.0				
Green Ext Time (p_c), s	0.0	9.4		0.0	0.0	8.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		36.0
HCM 6th LOS		D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1154	41	6	1135	11	170	31	9	53	18	244
Future Volume (veh/h)	183	1154	41	6	1135	11	170	31	9	53	18	244
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	199	1254	45	7	1234	12	185	34	10	58	20	265
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	208	1722	62	64	2440	24	168	131	39	226	78	267
Arrive On Green	0.06	0.49	0.51	0.04	0.47	0.49	0.12	0.09	0.09	0.19	0.17	0.17
Sat Flow, veh/h	3456	3499	125	1781	5215	51	1781	1388	408	1341	462	1585
Grp Volume(v), veh/h	199	636	663	7	806	440	185	0	44	78	0	265
Grp Sat Flow(s),veh/h/ln	1728	1777	1848	1781	1702	1861	1781	0	1797	1803	0	1585
Q Serve(g_s), s	8.0	39.7	39.7	0.5	23.1	23.1	13.2	0.0	3.2	5.2	0.0	23.4
Cycle Q Clear(g_c), s	8.0	39.7	39.7	0.5	23.1	23.1	13.2	0.0	3.2	5.2	0.0	23.4
Prop In Lane	1.00		0.07	1.00		0.03	1.00		0.23	0.74		1.00
Lane Grp Cap(c), veh/h	208	875	910	64	1593	871	168	0	169	304	0	267
V/C Ratio(X)	0.96	0.73	0.73	0.11	0.51	0.51	1.10	0.00	0.26	0.26	0.00	0.99
Avail Cap(c_a), veh/h	395	875	910	89	1593	871	303	0	305	319	0	281
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	65.6	28.1	28.0	65.3	26.0	25.9	61.9	0.0	58.9	49.6	0.0	58.1
Incr Delay (d2), s/veh	20.8	5.3	5.1	0.8	1.2	2.1	73.7	0.0	0.8	0.4	0.0	50.7
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	4.2	18.0	18.7	0.3	9.7	10.8	9.3	0.0	1.5	2.4	0.0	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.5	33.4	33.1	66.1	27.1	28.0	135.6	0.0	59.7	50.0	0.0	108.9
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1498			1253			229			343	
Approach Delay, s/veh		40.3			27.7			121.0			95.5	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	76.8		30.8	15.4	73.4		20.4
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2
Max Green Setting (Gmax), s	10.0	58.1		* 28	19.0	49.1		26.8
Max Q Clear Time (g_c+I1), s	10.0	42.7		26.4	11.0	26.1		15.2
Green Ext Time (p_c), s	0.0	8.0		0.2	0.4	9.3		0.9

Intersection Summary	
HCM 6th Ctrl Delay	46.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	681	67	707	734	105	52	137	604	80	109	85
Future Volume (veh/h)	88	681	67	707	734	105	52	137	604	80	109	85
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	96	740	73	768	798	114	57	149	657	87	118	92
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	130	1276	569	844	1676	239	84	354	687	120	404	342
Arrive On Green	0.07	0.36	0.36	0.24	0.54	0.54	0.05	0.19	0.19	0.07	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3121	446	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	96	740	73	768	454	458	57	149	657	87	118	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1790	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.4	23.6	3.6	30.2	22.3	22.3	4.4	9.8	22.0	6.7	7.4	6.8
Cycle Q Clear(g_c), s	7.4	23.6	3.6	30.2	22.3	22.3	4.4	9.8	22.0	6.7	7.4	6.8
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	1276	569	844	954	961	84	354	687	120	404	342
V/C Ratio(X)	0.74	0.58	0.13	0.91	0.48	0.48	0.68	0.42	0.96	0.72	0.29	0.27
Avail Cap(c_a), veh/h	178	1276	569	889	954	961	153	389	716	216	456	386
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	63.6	36.3	20.6	51.4	20.2	20.2	65.6	50.0	38.4	64.0	45.9	45.7
Incr Delay (d2), s/veh	10.0	1.9	0.5	12.9	1.7	1.7	9.0	0.8	23.1	7.9	0.4	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	3.7	10.6	1.7	14.6	9.7	9.8	2.2	4.7	10.8	3.3	3.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.6	38.2	21.1	64.3	21.9	21.9	74.7	50.8	61.5	71.9	46.3	46.1
LnGrp LOS	E	D	C	E	C	C	E	D	E	E	D	D
Approach Vol, veh/h		909			1680			863			297	
Approach Delay, s/veh		40.6			41.3			60.5			53.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.1	55.2	10.6	35.1	14.2	80.1	14.4	31.4
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	33.2	26.6	7.4	10.4	10.4	25.3	9.7	25.0
Green Ext Time (p_c), s	0.9	4.5	0.0	0.9	0.1	7.1	0.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	572	29	37	628	39	21	2	18	22	6	13
Future Volume (veh/h)	6	572	29	37	628	39	21	2	18	22	6	13
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	7	622	32	40	683	42	23	2	20	24	7	14
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	75	1334	68	766	1327	82	159	11	50	164	24	36
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	5	1753	89	779	1744	107	727	157	707	773	336	501
Grp Volume(v), veh/h	661	0	0	40	0	725	45	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1847	0	0	779	0	1851	1592	0	0	1609	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.5	0.0	7.8	1.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.06	0.51		0.44	0.53		0.31
Lane Grp Cap(c), veh/h	1478	0	0	766	0	1409	220	0	0	223	0	0
V/C Ratio(X)	0.45	0.00	0.00	0.05	0.00	0.51	0.20	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	1478	0	0	766	0	1409	792	0	0	802	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	1.5	0.0	2.4	22.4	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	1.3	0.5	0.0	0.0	0.4	0.0	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	0.9	0.0	0.0	0.0	0.0	1.1	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.2	0.0	0.0	1.6	0.0	3.7	22.9	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		661			765			45			45	
Approach Delay, s/veh		3.2			3.6			22.9			22.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	43.0	7.6	43.0	7.6
Change Period (Y+Rc), s	4.5	4.0	4.5	4.0
Max Green Setting (Gmax), s	38.5	23.0	38.5	23.0
Max Q Clear Time (g_c+I1), s	8.7	3.2	9.8	3.2
Green Ext Time (p_c), s	5.2	0.1	6.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	15					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	542	559	108	153	19
Future Vol, veh/h	19	542	559	108	153	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	21	589	608	117	166	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	725	0	-	0	1298	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	878	-	-	-	178	459
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	878	-	-	-	172	459
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	530	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	120.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	878	-	-	-	185
HCM Lane V/C Ratio	0.024	-	-	-	1.011
HCM Control Delay (s)	9.2	0	-	-	120.9
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	8.5

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	9	400	22	101	394	2	22	7	100	4	6	6
Future Vol, veh/h	9	400	22	101	394	2	22	7	100	4	6	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	10	435	24	110	428	2	24	8	109	4	7	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	459	0	0	1123	1117	447	1175	1128	429
Stage 1	-	-	-	-	-	-	467	467	-	649	649	-
Stage 2	-	-	-	-	-	-	656	650	-	526	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1129	-	-	1102	-	-	183	207	612	168	204	626
Stage 1	-	-	-	-	-	-	576	562	-	458	466	-
Stage 2	-	-	-	-	-	-	454	465	-	535	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1129	-	-	1102	-	-	157	178	612	119	175	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	178	-	119	175	-
Stage 1	-	-	-	-	-	-	569	555	-	453	405	-
Stage 2	-	-	-	-	-	-	384	404	-	429	548	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.8	20.2	24.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	1129	-	-	1102	-	-	206
HCM Lane V/C Ratio	0.373	0.009	-	-	0.1	-	-	0.084
HCM Control Delay (s)	20.2	8.2	0	-	8.6	0	-	24.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.3	-	-	0.3

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	32	28	386	46	97
Future Vol, veh/h	315	32	28	386	46	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	342	35	30	420	50	105
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.8	15	10.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	32%	0%	7%
Vol Thru, %	0%	91%	93%
Vol Right, %	68%	9%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	143	347	414
LT Vol	46	0	28
Through Vol	0	315	386
RT Vol	97	32	0
Lane Flow Rate	155	377	450
Geometry Grp	1	1	1
Degree of Util (X)	0.239	0.505	0.6
Departure Headway (Hd)	5.537	4.82	4.804
Convergence, Y/N	Yes	Yes	Yes
Cap	653	739	742
Service Time	3.537	2.91	2.891
HCM Lane V/C Ratio	0.237	0.51	0.606
HCM Control Delay	10.3	12.8	15
HCM Lane LOS	B	B	B
HCM 95th-tile Q	0.9	2.9	4.1

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	6	2	223	0	60	0	100	324	112	139	0
Future Vol, veh/h	3	6	2	223	0	60	0	100	324	112	139	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	7	2	242	0	65	0	109	352	122	151	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.6	14.4	12.4	13.1
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	27%	79%	45%
Vol Thru, %	100%	0%	55%	0%	55%
Vol Right, %	0%	100%	18%	21%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	324	11	283	251
LT Vol	0	0	3	223	112
Through Vol	100	0	6	0	139
RT Vol	0	324	2	60	0
Lane Flow Rate	109	352	12	308	273
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.178	0.508	0.021	0.494	0.434
Departure Headway (Hd)	5.899	5.189	6.396	5.781	5.723
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	608	694	557	621	627
Service Time	3.642	2.932	4.468	3.824	3.769
HCM Lane V/C Ratio	0.179	0.507	0.022	0.496	0.435
HCM Control Delay	9.9	13.2	9.6	14.4	13.1
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.6	2.9	0.1	2.7	2.2

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	169	105	47	6	52	0	0	69	7
Future Vol, veh/h	0	0	0	169	105	47	6	52	0	0	69	7
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	184	114	51	7	57	0	0	75	8
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.5	8.4	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	69%	91%
Vol Right, %	0%	0%	31%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	169	152	76
LT Vol	6	169	0	0
Through Vol	52	0	105	69
RT Vol	0	0	47	7
Lane Flow Rate	63	184	165	83
Geometry Grp	2	7	7	2
Degree of Util (X)	0.086	0.275	0.214	0.11
Departure Headway (Hd)	4.885	5.389	4.671	4.785
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	667	770	750
Service Time	2.906	3.114	2.395	2.805
HCM Lane V/C Ratio	0.086	0.276	0.214	0.111
HCM Control Delay	8.4	10.2	8.7	8.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	1.1	0.8	0.4

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	55	551	9	83	535	79	11	1	32	18	1	62
Future Vol, veh/h	55	551	9	83	535	79	11	1	32	18	1	62
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	60	599	10	90	582	86	12	1	35	20	1	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	668	0	0	609	0	0	1196	1572	305	1225	1534	334
Stage 1	-	-	-	-	-	-	724	724	-	805	805	-
Stage 2	-	-	-	-	-	-	472	848	-	420	729	-
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	918	-	-	966	-	-	142	109	691	135	115	662
Stage 1	-	-	-	-	-	-	383	429	-	342	393	-
Stage 2	-	-	-	-	-	-	542	376	-	581	426	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	918	-	-	966	-	-	104	83	691	105	88	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	178	-	207	183	-
Stage 1	-	-	-	-	-	-	345	387	-	308	334	-
Stage 2	-	-	-	-	-	-	412	320	-	496	384	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.5	14.7	15.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	418	918	-	-	966	-	-	435
HCM Lane V/C Ratio	0.114	0.065	-	-	0.093	-	-	0.202
HCM Control Delay (s)	14.7	9.2	0.4	-	9.1	0.5	-	15.4
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.3	-	-	0.7

Intersection	
Intersection Delay, s/veh	68.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	515	74	208	495	44	80	143	187	58	96	58
Future Vol, veh/h	58	515	74	208	495	44	80	143	187	58	96	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	560	80	226	538	48	87	155	203	63	104	63
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	93	67.4	43.4	50
HCM LOS	F	F	E	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	0%	100%	0%	0%	100%	0%	0%	27%
Vol Thru, %	64%	0%	0%	100%	70%	0%	100%	79%	45%
Vol Right, %	0%	100%	0%	0%	30%	0%	0%	21%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	223	187	58	343	246	208	330	209	212
LT Vol	80	0	58	0	0	208	0	0	58
Through Vol	143	0	0	343	172	0	330	165	96
RT Vol	0	187	0	0	74	0	0	44	58
Lane Flow Rate	242	203	63	373	267	226	359	227	230
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.809	0.629	0.205	1.162	0.816	0.71	1.075	0.672	0.787
Departure Headway (Hd)	12.647	11.726	12.159	11.627	11.403	11.802	11.27	11.113	12.726
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	288	311	297	313	320	307	326	327	286
Service Time	10.347	9.426	9.859	9.327	9.103	9.502	8.97	8.813	10.426
HCM Lane V/C Ratio	0.84	0.653	0.212	1.192	0.834	0.736	1.101	0.694	0.804
HCM Control Delay	52.7	32.4	18	136.8	49.5	38.9	106.6	33.9	50
HCM Lane LOS	F	D	C	F	E	E	F	D	E
HCM 95th-tile Q	6.5	4	0.8	15.2	6.8	5	12.9	4.6	6.1

Intersection												
Int Delay, s/veh	1.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	759	15	97	731	10	20	0	82	3	0	2
Future Vol, veh/h	1	759	15	97	731	10	20	0	82	3	0	2
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	825	16	105	795	11	22	0	89	3	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	806	0	0	841	0	0	1443	-	421	1426	1854	403
Stage 1	-	-	-	-	-	-	835	-	-	1011	1011	-
Stage 2	-	-	-	-	-	-	608	-	-	415	843	-
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	814	-	-	790	-	-	93	0	581	96	73	597
Stage 1	-	-	-	-	-	-	328	0	-	257	315	-
Stage 2	-	-	-	-	-	-	450	0	-	585	378	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	814	-	-	790	-	-	75	-	581	66	55	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	-	-	169	141	-
Stage 1	-	-	-	-	-	-	327	-	-	256	239	-
Stage 2	-	-	-	-	-	-	340	-	-	494	377	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.1	12.3	20.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	814	-	-	790	-	-	237
HCM Lane V/C Ratio	0.153	0.001	-	-	0.133	-	-	0.023
HCM Control Delay (s)	12.3	9.4	-	-	10.3	1	-	20.5
HCM Lane LOS	B	A	-	-	B	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.5	-	-	0.1

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	754	9	121	709	0	31	1	342	1	0	2
Future Vol, veh/h	25	754	9	121	709	0	31	1	342	1	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	820	10	132	771	0	34	1	372	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	771	0	0	830	0	0	1529	1914	415	1500	1919	386
Stage 1	-	-	-	-	-	-	879	879	-	1035	1035	-
Stage 2	-	-	-	-	-	-	650	1035	-	465	884	-
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	840	-	-	798	-	-	80	67	586	84	67	612
Stage 1	-	-	-	-	-	-	309	363	-	248	307	-
Stage 2	-	-	-	-	-	-	424	307	-	547	362	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	840	-	-	798	-	-	59	45	586	23	45	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	197	162	-	52	149	-
Stage 1	-	-	-	-	-	-	290	341	-	233	218	-
Stage 2	-	-	-	-	-	-	300	218	-	187	340	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.5	36.3	32.7
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	501	840	-	-	798	-	-	133
HCM Lane V/C Ratio	0.811	0.032	-	-	0.165	-	-	0.025
HCM Control Delay (s)	36.3	9.4	0.3	-	10.4	1.1	-	32.7
HCM Lane LOS	E	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	7.8	0.1	-	-	0.6	-	-	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	530	698	543	410	459	294
Future Volume (veh/h)	530	698	543	410	459	294
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	576	759	590	446	499	0
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	667	2110	1248	557	1063	
Arrive On Green	0.19	0.59	0.35	0.35	0.31	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	576	759	590	446	499	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	14.7	10.0	11.8	23.1	10.6	0.0
Cycle Q Clear(g_c), s	14.7	10.0	11.8	23.1	10.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	667	2110	1248	557	1063	
V/C Ratio(X)	0.86	0.36	0.47	0.80	0.47	
Avail Cap(c_a), veh/h	778	4215	3239	1445	1063	
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	0.00
Uniform Delay (d), s/veh	35.6	9.6	23.0	26.7	25.5	0.0
Incr Delay (d2), s/veh	8.9	0.1	0.3	2.7	1.5	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	6.9	3.6	4.8	8.8	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.4	9.7	23.3	29.4	27.0	0.0
LnGrp LOS	D	A	C	C	C	
Approach Vol, veh/h		1335	1036		499	
Approach Delay, s/veh		24.7	25.9		27.0	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	58.6	32.5	22.1	36.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	108.0	28.0	20.5	83.0
Max Q Clear Time (g_c+I1), s	12.0	12.6	16.7	25.1
Green Ext Time (p_c), s	6.5	1.6	0.9	6.9

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	84	47	103	72	144	37	546	121	171	823	20
Future Volume (veh/h)	116	84	47	103	72	144	37	546	121	171	823	20
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	126	91	51	112	78	157	40	593	132	186	895	22
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	196	226	127	182	107	215	75	777	172	166	1134	28
Arrive On Green	0.11	0.20	0.20	0.10	0.19	0.19	0.04	0.27	0.27	0.09	0.32	0.32
Sat Flow, veh/h	1781	1126	631	1781	554	1115	1781	2890	642	1781	3544	87
Grp Volume(v), veh/h	126	0	142	112	0	235	40	364	361	186	449	468
Grp Sat Flow(s),veh/h/ln	1781	0	1757	1781	0	1670	1781	1777	1755	1781	1777	1855
Q Serve(g_s), s	3.6	0.0	3.8	3.2	0.0	7.1	1.2	10.1	10.2	5.0	12.3	12.3
Cycle Q Clear(g_c), s	3.6	0.0	3.8	3.2	0.0	7.1	1.2	10.1	10.2	5.0	12.3	12.3
Prop In Lane	1.00		0.36	1.00		0.67	1.00		0.37	1.00		0.05
Lane Grp Cap(c), veh/h	196	0	353	182	0	322	75	477	472	166	569	593
V/C Ratio(X)	0.64	0.00	0.40	0.62	0.00	0.73	0.54	0.76	0.77	1.12	0.79	0.79
Avail Cap(c_a), veh/h	862	0	851	829	0	808	166	596	588	166	596	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	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	22.9	0.0	18.7	23.1	0.0	20.4	25.2	18.1	18.1	24.4	16.6	16.6
Incr Delay (d2), s/veh	3.5	0.0	0.7	3.4	0.0	3.2	5.9	4.5	4.7	106.2	6.8	6.5
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	1.6	0.0	1.5	1.4	0.0	2.8	0.6	4.3	4.3	6.8	5.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	19.4	26.5	0.0	23.5	31.1	22.6	22.8	130.6	23.4	23.1
LnGrp LOS	C	A	B	C	A	C	C	C	C	F	C	C
Approach Vol, veh/h		268			347			765			1103	
Approach Delay, s/veh		22.7			24.5			23.1			41.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	18.9	10.0	15.3	6.7	21.7	10.4	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	25.0	26.0	5.0	18.0	26.0	26.0
Max Q Clear Time (g_c+I1), s	7.0	12.2	5.2	5.8	3.2	14.3	5.6	9.1
Green Ext Time (p_c), s	0.0	2.3	0.3	0.7	0.0	1.9	0.3	1.3

Intersection Summary		
HCM 6th Ctrl Delay		31.4
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1365	2	74	1324	77	11	7	111	157	10	15
Future Volume (veh/h)	10	1365	2	74	1324	77	11	7	111	157	10	15
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	11	1484	2	80	1439	84	12	8	0	171	11	16
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	2196	3	85	2150	1002	72	33		233	11	239
Arrive On Green	0.05	0.60	0.63	0.05	0.60	0.63	0.18	0.15	0.00	0.18	0.15	0.15
Sat Flow, veh/h	1781	3641	5	1781	3554	1585	133	216	1585	1128	73	1585
Grp Volume(v), veh/h	11	724	762	80	1439	84	20	0	0	182	0	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1585	349	0	1585	1200	0	1585
Q Serve(g_s), s	0.7	30.0	30.0	4.9	29.6	2.3	0.2	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.7	30.0	30.0	4.9	29.6	2.3	16.9	0.0	0.0	16.7	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	0.60		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	81	1071	1127	85	2150	1002	114	0		277	0	239
V/C Ratio(X)	0.14	0.68	0.68	0.95	0.67	0.08	0.17	0.00		0.66	0.00	0.07
Avail Cap(c_a), veh/h	81	1071	1127	97	2150	1002	303	0		451	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	14.6	14.6	52.3	14.4	7.9	40.4	0.0	0.0	45.4	0.0	40.1
Incr Delay (d2), s/veh	0.8	3.4	3.3	69.9	1.7	0.2	0.7	0.0	0.0	2.6	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	0.3	12.3	12.9	3.8	11.6	0.8	0.5	0.0	0.0	4.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	18.1	17.9	122.1	16.1	8.0	41.1	0.0	0.0	48.0	0.0	40.2
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1497			1603			20			198	
Approach Delay, s/veh		18.2			21.0			41.1			47.4	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	74.2		23.6	12.0	74.4		23.6				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0				
Max Q Clear Time (g_c+I1), s	7.9	33.0		18.7	3.7	32.6		18.9				
Green Ext Time (p_c), s	0.0	11.6		0.8	0.0	12.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	1156	95	20	1088	24	121	24	15	120	15	269
Future Volume (veh/h)	214	1156	95	20	1088	24	121	24	15	120	15	269
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	233	1257	103	22	1183	26	132	26	16	130	16	292
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	240	1574	129	74	2290	50	97	59	36	300	37	298
Arrive On Green	0.07	0.47	0.50	0.04	0.45	0.47	0.08	0.05	0.05	0.21	0.19	0.19
Sat Flow, veh/h	3456	3326	272	1781	5141	113	1781	1084	667	1594	196	1585
Grp Volume(v), veh/h	233	670	690	22	783	426	132	0	42	146	0	292
Grp Sat Flow(s),veh/h/ln	1728	1777	1821	1781	1702	1850	1781	0	1750	1791	0	1585
Q Serve(g_s), s	8.1	38.3	38.4	1.4	19.9	19.9	6.6	0.0	2.8	8.5	0.0	22.0
Cycle Q Clear(g_c), s	8.1	38.3	38.4	1.4	19.9	19.9	6.6	0.0	2.8	8.5	0.0	22.0
Prop In Lane	1.00		0.15	1.00		0.06	1.00		0.38	0.89		1.00
Lane Grp Cap(c), veh/h	240	841	862	74	1516	824	97	0	96	337	0	298
V/C Ratio(X)	0.97	0.80	0.80	0.30	0.52	0.52	1.36	0.00	0.44	0.43	0.00	0.98
Avail Cap(c_a), veh/h	346	841	862	104	1516	824	386	0	379	370	0	328
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	55.7	26.7	26.6	55.8	24.0	23.9	55.2	0.0	54.9	41.8	0.0	48.5
Incr Delay (d2), s/veh	33.7	7.7	7.7	2.2	1.3	2.3	174.4	0.0	3.1	0.9	0.0	42.7
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	4.6	17.6	18.1	0.7	8.2	9.1	7.6	0.0	1.3	3.8	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.4	34.5	34.3	58.0	25.2	26.2	229.6	0.0	58.1	42.7	0.0	91.2
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1593			1231			174			438	
Approach Delay, s/veh		42.4			26.2			188.2			75.1	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	64.8		29.8	15.3	61.4		13.5
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0
Max Green Setting (Gmax), s	10.0	36.1		* 28	15.0	31.1		29.0
Max Q Clear Time (g_c+I1), s	14.4	41.3		25.0	11.1	22.9		8.6
Green Ext Time (p_c), s	0.0	0.0		0.6	0.3	4.8		0.9

Intersection Summary		
HCM 6th Ctrl Delay		48.1
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	646	37	694	646	123	37	219	633	116	120	80
Future Volume (veh/h)	137	646	37	694	646	123	37	219	633	116	120	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	149	702	40	754	702	134	40	238	688	126	130	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	178	1133	506	866	1417	270	62	373	714	162	490	416
Arrive On Green	0.10	0.32	0.32	0.25	0.48	0.48	0.03	0.20	0.20	0.09	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	3456	2977	568	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	149	702	40	754	419	417	40	238	688	126	130	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1768	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.5	23.5	2.1	29.3	22.6	22.7	3.1	16.3	23.9	9.7	7.7	6.0
Cycle Q Clear(g_c), s	11.5	23.5	2.1	29.3	22.6	22.7	3.1	16.3	23.9	9.7	7.7	6.0
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1133	506	866	846	842	62	373	714	162	490	416
V/C Ratio(X)	0.84	0.62	0.08	0.87	0.50	0.50	0.65	0.64	0.96	0.78	0.27	0.21
Avail Cap(c_a), veh/h	178	1133	506	889	846	842	153	389	727	216	490	416
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	61.9	40.5	24.4	50.3	25.1	25.1	66.7	51.4	37.4	62.3	40.9	40.3
Incr Delay (d2), s/veh	27.9	2.5	0.3	9.2	2.1	2.1	11.0	3.3	24.6	12.1	0.3	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	10.7	1.0	13.8	10.1	10.0	1.6	8.0	11.9	4.9	3.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.8	43.0	24.7	59.5	27.2	27.2	77.7	54.6	61.9	74.4	41.2	40.6
LnGrp LOS	F	D	C	E	C	C	E	D	E	E	D	D
Approach Vol, veh/h		891			1590			966			343	
Approach Delay, s/veh		50.0			42.5			60.8			53.3	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	49.6	8.8	41.6	18.0	71.6	17.6	32.8
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	31.3	26.5	6.1	10.7	14.5	25.6	12.7	26.9
Green Ext Time (p_c), s	1.2	4.2	0.0	1.0	0.0	6.3	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	617	26	33	516	24	13	3	29	0	31	16
Future Volume (veh/h)	8	617	26	33	516	24	13	3	29	0	31	16
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	9	671	28	36	561	26	14	3	32	0	34	17
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	76	1342	55	730	1345	62	112	13	63	0	88	44
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.07	0.07	0.07	0.00	0.07	0.07
Sat Flow, veh/h	6	1770	73	747	1773	82	274	177	851	0	1176	588
Grp Volume(v), veh/h	708	0	0	36	0	587	49	0	0	0	0	51
Grp Sat Flow(s),veh/h/ln	1850	0	0	747	0	1856	1302	0	0	0	0	1764
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.7	0.7	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	7.6	0.0	0.0	0.5	0.0	5.7	2.1	0.0	0.0	0.0	0.0	1.4
Prop In Lane	0.01		0.04	1.00		0.04	0.29		0.65	0.00		0.33
Lane Grp Cap(c), veh/h	1474	0	0	730	0	1407	188	0	0	0	0	131
V/C Ratio(X)	0.48	0.00	0.00	0.05	0.00	0.42	0.26	0.00	0.00	0.00	0.00	0.39
Avail Cap(c_a), veh/h	1474	0	0	730	0	1407	765	0	0	0	0	799
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	1.5	0.0	2.2	22.7	0.0	0.0	0.0	0.0	22.4
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.0	0.9	0.7	0.0	0.0	0.0	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	1.0	0.0	0.0	0.0	0.0	0.8	0.6	0.0	0.0	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.5	0.0	0.0	1.7	0.0	3.1	23.4	0.0	0.0	0.0	0.0	24.3
LnGrp LOS	A	A	A	A	A	A	C	A	A	A	A	C
Approach Vol, veh/h		708			623			49			51	
Approach Delay, s/veh		3.5			3.0			23.4			24.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		7.8		43.0		7.8				
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0				
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0				
Max Q Clear Time (g_c+I1), s		9.6		4.1		7.7		3.4				
Green Ext Time (p_c), s		5.7		0.2		4.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			4.7									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	17.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	531	602	120	132	29
Future Vol, veh/h	48	531	602	120	132	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	52	577	654	130	143	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	784	0	-	0	1400	719
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	681	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	834	-	-	-	155	428
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	834	-	-	-	~ 141	428
Mov Cap-2 Maneuver	-	-	-	-	~ 141	-
Stage 1	-	-	-	-	439	-
Stage 2	-	-	-	-	503	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	155.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	834	-	-	-	160
HCM Lane V/C Ratio	0.063	-	-	-	1.094
HCM Control Delay (s)	9.6	0	-	-	155.9
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	9.1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	390	36	129	368	3	43	10	89	8	12	14
Future Vol, veh/h	13	390	36	129	368	3	43	10	89	8	12	14
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	-	-	-	-	-	-	-	-	-	-	-	-
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	14	424	39	140	400	3	47	11	97	9	13	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	463	0	0	1168	1155	444	1208	1173	402
Stage 1	-	-	-	-	-	-	472	472	-	682	682	-
Stage 2	-	-	-	-	-	-	696	683	-	526	491	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1156	-	-	1098	-	-	170	197	614	160	192	648
Stage 1	-	-	-	-	-	-	573	559	-	440	450	-
Stage 2	-	-	-	-	-	-	432	449	-	535	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1156	-	-	1098	-	-	135	162	614	111	158	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	162	-	111	158	-
Stage 1	-	-	-	-	-	-	564	550	-	433	376	-
Stage 2	-	-	-	-	-	-	340	375	-	435	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.3	34.7	27
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	270	1156	-	-	1098	-	-	200
HCM Lane V/C Ratio	0.572	0.012	-	-	0.128	-	-	0.185
HCM Control Delay (s)	34.7	8.2	0	-	8.8	0	-	27
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	3.3	0	-	-	0.4	-	-	0.7

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	412	82	17	398	29	51
Future Vol, veh/h	412	82	17	398	29	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	448	89	18	433	32	55
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.1	14.7	9.8
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	4%
Vol Thru, %	0%	83%	96%
Vol Right, %	64%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	494	415
LT Vol	29	0	17
Through Vol	0	412	398
RT Vol	51	82	0
Lane Flow Rate	87	537	451
Geometry Grp	1	1	1
Degree of Util (X)	0.141	0.684	0.597
Departure Headway (Hd)	5.841	4.583	4.763
Convergence, Y/N	Yes	Yes	Yes
Cap	617	784	753
Service Time	3.841	2.645	2.831
HCM Lane V/C Ratio	0.141	0.685	0.599
HCM Control Delay	9.8	17.1	14.7
HCM Lane LOS	A	C	B
HCM 95th-tile Q	0.5	5.5	4

Intersection	
Intersection Delay, s/veh	33
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	91	16	83	0	180	0	428	174	159	102	0
Future Vol, veh/h	143	91	16	83	0	180	0	428	174	159	102	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	155	99	17	90	0	196	0	465	189	173	111	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	22.1	21	47.1	23
HCM LOS	C	C	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	57%	32%	61%
Vol Thru, %	100%	0%	36%	0%	39%
Vol Right, %	0%	100%	6%	68%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	428	174	250	263	261
LT Vol	0	0	143	83	159
Through Vol	428	0	91	0	102
RT Vol	0	174	16	180	0
Lane Flow Rate	465	189	272	286	284
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.968	0.356	0.597	0.594	0.619
Departure Headway (Hd)	7.489	6.769	7.912	7.482	7.859
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	484	530	454	480	460
Service Time	5.248	4.528	5.981	5.549	5.93
HCM Lane V/C Ratio	0.961	0.357	0.599	0.596	0.617
HCM Control Delay	60.8	13.3	22.1	21	23
HCM Lane LOS	F	B	C	C	C
HCM 95th-tile Q	12.2	1.6	3.8	3.8	4.1

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	270	118	56	8	78	0	0	120	27
Future Vol, veh/h	0	0	0	270	118	56	8	78	0	0	120	27
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	293	128	61	9	85	0	0	130	29
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.8	9.2	9.6
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	100%	0%	0%
Vol Thru, %	91%	0%	68%	82%
Vol Right, %	0%	0%	32%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	270	174	147
LT Vol	8	270	0	0
Through Vol	78	0	118	120
RT Vol	0	0	56	27
Lane Flow Rate	93	293	189	160
Geometry Grp	2	7	7	2
Degree of Util (X)	0.138	0.462	0.26	0.226
Departure Headway (Hd)	5.318	5.672	4.943	5.098
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	671	634	722	701
Service Time	3.375	3.43	2.701	3.148
HCM Lane V/C Ratio	0.139	0.462	0.262	0.228
HCM Control Delay	9.2	13.3	9.4	9.6
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	2.4	1	0.9

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	659	8	85	709	69	0	0	33	48	0	55
Future Vol, veh/h	47	659	8	85	709	69	0	0	33	48	0	55
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	51	716	9	92	771	75	0	0	36	52	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	846	0	0	725	0	0	1393	1853	363	1453	1820	423
Stage 1	-	-	-	-	-	-	823	823	-	993	993	-
Stage 2	-	-	-	-	-	-	570	1030	-	460	827	-
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	787	-	-	874	-	-	101	73	634	91	77	579
Stage 1	-	-	-	-	-	-	334	386	-	263	322	-
Stage 2	-	-	-	-	-	-	474	309	-	551	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	787	-	-	874	-	-	70	52	634	67	55	579
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	135	-	160	141	-
Stage 1	-	-	-	-	-	-	298	344	-	234	257	-
Stage 2	-	-	-	-	-	-	339	247	-	463	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.6	11	28.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	634	787	-	-	874	-	-	261
HCM Lane V/C Ratio	0.057	0.065	-	-	0.106	-	-	0.429
HCM Control Delay (s)	11	9.9	0.5	-	9.6	0.8	-	28.8
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.4	-	-	2

Intersection	
Intersection Delay, s/veh	121.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	648	82	214	634	61	79	74	169	66	97	57
Future Vol, veh/h	76	648	82	214	634	61	79	74	169	66	97	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	704	89	233	689	66	86	80	184	72	105	62
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	165.7	127.2	34.4	58.9
HCM LOS	F	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	52%	0%	100%	0%	0%	100%	0%	0%	30%
Vol Thru, %	48%	0%	0%	100%	72%	0%	100%	78%	44%
Vol Right, %	0%	100%	0%	0%	28%	0%	0%	22%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	153	169	76	432	298	214	423	272	220
LT Vol	79	0	76	0	0	214	0	0	66
Through Vol	74	0	0	432	216	0	423	211	97
RT Vol	0	169	0	0	82	0	0	61	57
Lane Flow Rate	166	184	83	470	324	233	459	296	239
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.587	0.599	0.266	1.449	0.982	0.727	1.371	0.87	0.831
Departure Headway (Hd)	14.139	13.134	12.323	11.793	11.588	11.961	11.43	11.264	13.527
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	258	277	293	315	314	305	322	323	270
Service Time	11.839	10.834	10.023	9.493	9.288	9.661	9.13	8.964	11.227
HCM Lane V/C Ratio	0.643	0.664	0.283	1.492	1.032	0.764	1.425	0.916	0.885
HCM Control Delay	35.1	33.7	19.4	249.3	81.9	40.9	216	57.3	58.9
HCM Lane LOS	E	D	C	F	F	E	F	F	F
HCM 95th-tile Q	3.4	3.6	1	24	10.4	5.3	22	7.9	6.7

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	879	40	121	875	19	25	1	98	10	3	15
Future Vol, veh/h	0	879	40	121	875	19	25	1	98	10	3	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	0	955	43	132	951	21	27	1	107	11	3	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	998	0	0	1718	2213	499	1704	2224	486
Stage 1	-	-	-	-	-	-	977	977	-	1226	1226	-
Stage 2	-	-	-	-	-	-	741	1236	-	478	998	-
Critical Hdwy	-	-	-	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	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	689	-	-	58	43	517	59	43	527
Stage 1	0	-	-	-	-	-	269	327	-	189	249	-
Stage 2	0	-	-	-	-	-	374	246	-	537	320	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	689	-	-	37	25	517	31	25	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	100	-	118	86	-
Stage 1	-	-	-	-	-	-	269	327	-	189	145	-
Stage 2	-	-	-	-	-	-	206	143	-	425	320	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3	13.8	27.7
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	517	-	-	689	-	-	189
HCM Lane V/C Ratio	0.206	-	-	0.191	-	-	0.161
HCM Control Delay (s)	13.8	-	-	11.5	1.9	-	27.7
HCM Lane LOS	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.8	-	-	0.7	-	-	0.6

Intersection	
Int Delay, s/veh	106.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	894	14	178	992	7	27	0	207	0	0	12
Future Vol, veh/h	67	894	14	178	992	7	27	0	207	0	0	12
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	73	972	15	193	1078	8	29	0	225	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1086	0	0	987	0	0	2051	2598	494	2100	2601	543
Stage 1	-	-	-	-	-	-	1126	1126	-	1468	1468	-
Stage 2	-	-	-	-	-	-	925	1472	-	632	1133	-
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	638	-	-	696	-	-	32	25	521	30	24	484
Stage 1	-	-	-	-	-	-	218	278	-	134	190	-
Stage 2	-	-	-	-	-	-	290	189	-	435	276	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	638	-	-	696	-	-	~ 11	6	521	6	5	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	~ -15	-	~ -8	12	-
Stage 1	-	-	-	-	-	-	163	207	-	100	57	-
Stage 2	-	-	-	-	-	-	85	57	-	184	206	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	4.5	$ 1055.6	12.6
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	82	638	-	-	696	-	-	484
HCM Lane V/C Ratio	3.102	0.114	-	-	0.278	-	-	0.027
HCM Control Delay (s)	$ 1055.6	11.4	1.3	-	12.2	3.1	-	12.6
HCM Lane LOS	F	B	A	-	B	A	-	B
HCM 95th %tile Q(veh)	25.3	0.4	-	-	1.1	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	510	378	498	302	679	264
Future Volume (veh/h)	510	378	498	302	679	264
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	554	411	541	328	738	0
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	598	1733	897	400	1340	
Arrive On Green	0.17	0.49	0.25	0.25	0.39	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	554	411	541	328	738	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	11.4	4.8	9.7	14.1	12.0	0.0
Cycle Q Clear(g_c), s	11.4	4.8	9.7	14.1	12.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	598	1733	897	400	1340	
V/C Ratio(X)	0.93	0.24	0.60	0.82	0.55	
Avail Cap(c_a), veh/h	598	1870	1033	461	1340	
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	0.00
Uniform Delay (d), s/veh	29.4	10.7	23.8	25.5	17.2	0.0
Incr Delay (d2), s/veh	20.6	0.1	0.8	10.0	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	6.2	1.7	4.0	6.1	4.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.0	10.8	24.6	35.5	18.8	0.0
LnGrp LOS	D	B	C	D	B	
Approach Vol, veh/h		965	869		738	
Approach Delay, s/veh		33.3	28.7		18.8	
Approach LOS		C	C		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.7		32.5	17.0	22.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				6.8		14.0	13.4	16.1
Green Ext Time (p_c), s				2.9		2.5	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	176	43	44	217	85	108	602	53	216	850	67
Future Volume (veh/h)	152	176	43	44	217	85	108	602	53	216	850	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	165	191	47	48	236	92	117	654	58	235	924	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	217	400	98	119	283	110	149	857	76	278	1108	88
Arrive On Green	0.12	0.28	0.28	0.07	0.22	0.22	0.08	0.26	0.26	0.16	0.33	0.33
Sat Flow, veh/h	1781	1449	357	1781	1281	499	1781	3302	293	1781	3336	264
Grp Volume(v), veh/h	165	0	238	48	0	328	117	352	360	235	492	505
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1781	0	1780	1781	1777	1818	1781	1777	1823
Q Serve(g_s), s	6.7	0.0	8.2	1.9	0.0	13.1	4.8	13.6	13.7	9.6	19.1	19.1
Cycle Q Clear(g_c), s	6.7	0.0	8.2	1.9	0.0	13.1	4.8	13.6	13.7	9.6	19.1	19.1
Prop In Lane	1.00		0.20	1.00		0.28	1.00		0.16	1.00		0.14
Lane Grp Cap(c), veh/h	217	0	498	119	0	394	149	461	472	278	590	606
V/C Ratio(X)	0.76	0.00	0.48	0.40	0.00	0.83	0.79	0.76	0.76	0.84	0.83	0.83
Avail Cap(c_a), veh/h	621	0	630	597	0	597	189	527	539	342	679	697
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	31.7	0.0	22.5	33.4	0.0	27.7	33.5	25.5	25.5	30.6	23.0	23.0
Incr Delay (d2), s/veh	5.4	0.0	0.7	2.2	0.0	6.2	15.5	5.7	5.6	14.8	7.9	7.7
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	3.1	0.0	3.4	0.9	0.0	6.0	2.7	6.2	6.3	5.1	8.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.0	23.2	35.5	0.0	33.9	49.0	31.2	31.2	45.4	30.9	30.7
LnGrp LOS	D	A	C	D	A	C	D	C	C	D	C	C
Approach Vol, veh/h		403			376			829			1232	
Approach Delay, s/veh		28.9			34.1			33.7			33.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	23.8	9.5	25.1	10.7	29.3	13.6	21.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.3	22.1	25.0	26.0	7.9	28.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	11.6	15.7	3.9	10.2	6.8	21.1	8.7	15.1
Green Ext Time (p_c), s	0.2	2.4	0.1	1.2	0.0	3.7	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1424	2	72	1235	101	10	13	77	98	8	12
Future Volume (veh/h)	11	1424	2	72	1235	101	10	13	77	98	8	12
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	12	1548	2	78	1342	110	11	14	0	107	9	13
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	2343	3	84	2292	1065	60	50		170	9	175
Arrive On Green	0.05	0.64	0.67	0.05	0.64	0.67	0.14	0.11	0.00	0.14	0.11	0.11
Sat Flow, veh/h	1781	3642	5	1781	3554	1585	113	454	1585	964	81	1585
Grp Volume(v), veh/h	12	755	795	78	1342	110	25	0	0	116	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1870	1781	1777	1585	567	0	1585	1045	0	1585
Q Serve(g_s), s	0.7	29.0	29.0	4.8	23.7	2.7	0.1	0.0	0.0	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.7	29.0	29.0	4.8	23.7	2.7	12.9	0.0	0.0	12.8	0.0	0.8
Prop In Lane	1.00		0.00	1.00		1.00	0.44		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	81	1143	1203	84	2292	1065	125	0		207	0	175
V/C Ratio(X)	0.15	0.66	0.66	0.93	0.59	0.10	0.20	0.00		0.56	0.00	0.07
Avail Cap(c_a), veh/h	81	1143	1203	97	2292	1065	389	0		439	0	432
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	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	12.2	12.2	52.2	11.1	6.4	43.9	0.0	0.0	47.8	0.0	43.9
Incr Delay (d2), s/veh	0.8	3.0	2.9	65.0	1.1	0.2	0.8	0.0	0.0	2.4	0.0	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	0.3	11.5	12.0	3.7	8.9	0.9	0.6	0.0	0.0	3.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	15.2	15.0	117.3	12.2	6.5	44.7	0.0	0.0	50.2	0.0	44.0
LnGrp LOS	D	B	B	F	B	A	D	A		D	A	D
Approach Vol, veh/h		1562			1530			25			129	
Approach Delay, s/veh		15.4			17.2			44.7			49.5	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	78.7		19.2	12.0	78.8		19.2
Change Period (Y+Rc), s	4.0	4.9		4.0	4.0	4.9		4.0
Max Green Setting (Gmax), s	9.0	55.1		33.0	8.0	56.1		33.0
Max Q Clear Time (g_c+I1), s	7.8	32.0		14.8	3.7	26.7		14.9
Green Ext Time (p_c), s	0.0	12.6		0.5	0.0	13.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	1207	108	22	1041	26	136	29	5	82	12	190
Future Volume (veh/h)	207	1207	108	22	1041	26	136	29	5	82	12	190
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	225	1312	117	24	1132	28	148	32	5	89	13	207
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	237	1776	158	69	2602	64	113	100	16	213	31	216
Arrive On Green	0.07	0.54	0.56	0.04	0.51	0.53	0.09	0.06	0.06	0.16	0.14	0.14
Sat Flow, veh/h	3456	3301	293	1781	5125	127	1781	1579	247	1564	228	1585
Grp Volume(v), veh/h	225	704	725	24	752	408	148	0	37	102	0	207
Grp Sat Flow(s),veh/h/ln	1728	1777	1818	1781	1702	1848	1781	0	1826	1792	0	1585
Q Serve(g_s), s	8.4	39.4	39.7	1.7	18.1	18.1	8.3	0.0	2.5	6.7	0.0	16.9
Cycle Q Clear(g_c), s	8.4	39.4	39.7	1.7	18.1	18.1	8.3	0.0	2.5	6.7	0.0	16.9
Prop In Lane	1.00		0.16	1.00		0.07	1.00		0.14	0.87		1.00
Lane Grp Cap(c), veh/h	237	956	978	69	1728	938	113	0	116	244	0	216
V/C Ratio(X)	0.95	0.74	0.74	0.35	0.43	0.44	1.31	0.00	0.32	0.42	0.00	0.96
Avail Cap(c_a), veh/h	478	956	978	96	1728	938	329	0	337	356	0	315
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	60.3	23.0	22.9	60.9	20.2	20.1	59.4	0.0	58.2	50.2	0.0	55.8
Incr Delay (d2), s/veh	17.1	5.1	5.1	3.0	0.8	1.5	151.7	0.0	1.6	1.1	0.0	32.6
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	4.3	17.4	17.9	0.8	7.4	8.2	8.4	0.0	1.2	3.1	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	28.0	27.9	63.9	21.0	21.6	211.1	0.0	59.7	51.3	0.0	88.4
LnGrp LOS	E	C	C	E	C	C	F	A	E	D	A	F
Approach Vol, veh/h		1654			1184			185			309	
Approach Delay, s/veh		34.7			22.1			180.8			76.2	
Approach LOS		C			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	77.9		24.9	15.9	74.0		15.2				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.0				
Max Green Setting (Gmax), s	10.0	47.1		* 29	21.0	36.1		27.0				
Max Q Clear Time (g_c+I1), s	10.4	42.4		19.9	11.4	21.1		10.3				
Green Ext Time (p_c), s	0.0	3.4		0.8	0.5	6.9		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			42.2
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	678	39	669	625	102	42	243	672	119	110	76
Future Volume (veh/h)	144	678	39	669	625	102	42	243	672	119	110	76
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	157	737	42	727	679	111	46	264	730	129	120	83
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	1098	490	866	1425	233	70	389	727	165	500	424
Arrive On Green	0.10	0.31	0.31	0.25	0.47	0.47	0.04	0.21	0.21	0.09	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	3456	3058	499	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	157	737	42	727	394	396	46	264	730	129	120	83
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1780	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.2	25.3	2.2	27.9	21.3	21.4	3.6	18.2	29.1	9.9	7.0	5.7
Cycle Q Clear(g_c), s	12.2	25.3	2.2	27.9	21.3	21.4	3.6	18.2	29.1	9.9	7.0	5.7
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1098	490	866	828	830	70	389	727	165	500	424
V/C Ratio(X)	0.88	0.67	0.09	0.84	0.48	0.48	0.66	0.68	1.00	0.78	0.24	0.20
Avail Cap(c_a), veh/h	178	1098	490	889	828	830	153	389	727	216	500	424
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	62.2	42.2	24.9	49.8	25.6	25.7	66.3	51.1	37.9	62.2	40.1	39.6
Incr Delay (d2), s/veh	36.4	3.3	0.3	7.1	2.0	2.0	10.1	4.7	34.4	12.8	0.2	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	7.3	11.7	1.1	12.9	9.5	9.6	1.8	9.1	15.9	5.1	3.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.5	45.4	25.2	56.8	27.6	27.6	76.4	55.9	72.3	75.0	40.4	39.9
LnGrp LOS	F	D	C	E	C	C	E	E	F	E	D	D
Approach Vol, veh/h		936			1517			1040			332	
Approach Delay, s/veh		53.4			41.6			68.3			53.7	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	48.2	9.5	42.3	18.0	70.2	17.8	34.0
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.9	4.0	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	36.0	* 40	12.0	34.1	14.0	62.1	17.0	* 29
Max Q Clear Time (g_c+I1), s	30.9	28.3	6.6	10.0	15.2	24.3	12.9	32.1
Green Ext Time (p_c), s	1.4	4.1	0.0	0.9	0.0	5.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	547	32	16	557	32	10	2	10	14	12	16
Future Volume (veh/h)	10	547	32	16	557	32	10	2	10	14	12	16
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	11	595	35	17	605	35	11	2	11	15	13	17
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	1331	77	794	1346	78	145	14	46	127	32	38
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	9	1731	100	796	1751	101	650	230	745	499	517	616
Grp Volume(v), veh/h	641	0	0	17	0	640	24	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1840	0	0	796	0	1852	1625	0	0	1632	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	0.2	0.0	6.1	0.6	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.02		0.05	1.00		0.05	0.46		0.46	0.33		0.38
Lane Grp Cap(c), veh/h	1488	0	0	794	0	1424	205	0	0	196	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.02	0.00	0.45	0.12	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1488	0	0	794	0	1424	802	0	0	827	0	0
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	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.0	0.0	0.0	1.4	0.0	2.0	22.4	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.6	0.0	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	0.7	0.0	0.0	0.0	0.0	0.7	0.3	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.0	0.0	1.4	0.0	3.1	22.6	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		641			657			24			45	
Approach Delay, s/veh		3.0			3.0			22.6			23.2	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		7.1		43.0		7.1				
Change Period (Y+Rc), s		4.5		4.0		4.5		4.0				
Max Green Setting (Gmax), s		38.5		23.0		38.5		23.0				
Max Q Clear Time (g_c+I1), s		8.1		2.6		8.1		3.3				
Green Ext Time (p_c), s		5.0		0.1		5.1		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		4.0
HCM 6th LOS		A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	19.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	573	598	110	132	31
Future Vol, veh/h	45	573	598	110	132	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	49	623	650	120	143	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	770	0	-	0	1431	710
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	721	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	844	-	-	-	148	434
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	844	-	-	-	~ 135	434
Mov Cap-2 Maneuver	-	-	-	-	~ 135	-
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	174.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	844	-	-	-	155
HCM Lane V/C Ratio	0.058	-	-	-	1.143
HCM Control Delay (s)	9.5	0	-	-	174.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	9.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

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	11	418	50	103	378	5	29	10	113	7	3	11
Future Vol, veh/h	11	418	50	103	378	5	29	10	113	7	3	11
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	-	-	-	-	-	-	-	-	-	-	-	-
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	12	454	54	112	411	5	32	11	123	8	3	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	508	0	0	1150	1145	481	1210	1170	414
Stage 1	-	-	-	-	-	-	505	505	-	638	638	-
Stage 2	-	-	-	-	-	-	645	640	-	572	532	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1143	-	-	1057	-	-	175	200	585	159	193	638
Stage 1	-	-	-	-	-	-	549	540	-	465	471	-
Stage 2	-	-	-	-	-	-	461	470	-	505	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1057	-	-	150	170	585	106	164	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	170	-	106	164	-
Stage 1	-	-	-	-	-	-	541	532	-	458	406	-
Stage 2	-	-	-	-	-	-	387	405	-	385	518	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.9	25.1	24.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	341	1143	-	-	1057	-	-	207
HCM Lane V/C Ratio	0.485	0.01	-	-	0.106	-	-	0.11
HCM Control Delay (s)	25.1	8.2	0	-	8.8	0	-	24.5
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.5	0	-	-	0.4	-	-	0.4

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	46	44	395	53	96
Future Vol, veh/h	389	46	44	395	53	96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	423	50	48	429	58	104
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.1	17.9	11
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	10%
Vol Thru, %	0%	89%	90%
Vol Right, %	64%	11%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	149	435	439
LT Vol	53	0	44
Through Vol	0	389	395
RT Vol	96	46	0
Lane Flow Rate	162	473	477
Geometry Grp	1	1	1
Degree of Util (X)	0.264	0.656	0.672
Departure Headway (Hd)	5.865	4.997	5.067
Convergence, Y/N	Yes	Yes	Yes
Cap	612	723	716
Service Time	3.905	3.026	3.095
HCM Lane V/C Ratio	0.265	0.654	0.666
HCM Control Delay	11	17.1	17.9
HCM Lane LOS	B	C	C
HCM 95th-tile Q	1.1	4.9	5.2

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	47	9	73	0	191	0	328	211	168	238	0
Future Vol, veh/h	41	47	9	73	0	191	0	328	211	168	238	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	51	10	79	0	208	0	357	229	183	259	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	13	17	18.5	30.3
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	42%	28%	41%
Vol Thru, %	100%	0%	48%	0%	59%
Vol Right, %	0%	100%	9%	72%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	328	211	97	264	406
LT Vol	0	0	41	73	168
Through Vol	328	0	47	0	238
RT Vol	0	211	9	191	0
Lane Flow Rate	357	229	105	287	441
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.67	0.385	0.225	0.53	0.795
Departure Headway (Hd)	6.766	6.05	7.696	6.643	6.488
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	531	592	464	542	556
Service Time	4.526	3.81	5.778	4.702	4.545
HCM Lane V/C Ratio	0.672	0.387	0.226	0.53	0.793
HCM Control Delay	22.3	12.6	13	17	30.3
HCM Lane LOS	C	B	B	C	D
HCM 95th-tile Q	5	1.8	0.9	3.1	7.6

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	261	128	68	2	73	0	0	92	46
Future Vol, veh/h	0	0	0	261	128	68	2	73	0	0	92	46
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	284	139	74	2	79	0	0	100	50
Number of Lanes	0	0	0	1	1	0	0	1	0	0	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	11.4	9.1	9.4
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	100%	0%	0%
Vol Thru, %	97%	0%	65%	67%
Vol Right, %	0%	0%	35%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	261	196	138
LT Vol	2	261	0	0
Through Vol	73	0	128	92
RT Vol	0	0	68	46
Lane Flow Rate	82	284	213	150
Geometry Grp	2	7	7	2
Degree of Util (X)	0.12	0.442	0.288	0.208
Departure Headway (Hd)	5.291	5.611	4.865	4.995
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	675	641	735	717
Service Time	3.344	3.363	2.617	3.039
HCM Lane V/C Ratio	0.121	0.443	0.29	0.209
HCM Control Delay	9.1	12.8	9.6	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2.3	1.2	0.8

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	32	610	13	81	641	79	6	1	46	32	0	35
Future Vol, veh/h	32	610	13	81	641	79	6	1	46	32	0	35
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	35	663	14	88	697	86	7	1	50	35	0	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	783	0	0	677	0	0	1265	1699	339	1318	1663	392
Stage 1	-	-	-	-	-	-	740	740	-	916	916	-
Stage 2	-	-	-	-	-	-	525	959	-	402	747	-
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	831	-	-	911	-	-	126	91	657	115	96	607
Stage 1	-	-	-	-	-	-	375	421	-	293	349	-
Stage 2	-	-	-	-	-	-	504	334	-	596	418	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	831	-	-	911	-	-	97	70	657	87	74	607
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	166	-	189	168	-
Stage 1	-	-	-	-	-	-	350	392	-	273	288	-
Stage 2	-	-	-	-	-	-	390	276	-	512	390	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1.5	13.1	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	503	831	-	-	911	-	-	295
HCM Lane V/C Ratio	0.115	0.042	-	-	0.097	-	-	0.247
HCM Control Delay (s)	13.1	9.5	0.3	-	9.4	0.7	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.3	-	-	1

Intersection	
Intersection Delay, s/veh	112.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	603	76	251	648	60	77	70	168	61	98	58
Future Vol, veh/h	59	603	76	251	648	60	77	70	168	61	98	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	655	83	273	704	65	84	76	183	66	107	63
Number of Lanes	1	2	0	1	2	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	3	3
HCM Control Delay	141	128.5	33.6	56.7
HCM LOS	F	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	52%	0%	100%	0%	0%	100%	0%	0%	28%
Vol Thru, %	48%	0%	0%	100%	73%	0%	100%	78%	45%
Vol Right, %	0%	100%	0%	0%	27%	0%	0%	22%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	168	59	402	277	251	432	276	217
LT Vol	77	0	59	0	0	251	0	0	61
Through Vol	70	0	0	402	201	0	432	216	98
RT Vol	0	168	0	0	76	0	0	60	58
Lane Flow Rate	160	183	64	437	301	273	470	300	236
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.564	0.596	0.207	1.352	0.916	0.839	1.378	0.868	0.818
Departure Headway (Hd)	14.135	13.126	12.368	11.838	11.635	11.716	11.186	11.025	13.476
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	257	278	292	310	313	311	329	330	271
Service Time	11.835	10.826	10.068	9.538	9.335	9.416	8.886	8.725	11.176
HCM Lane V/C Ratio	0.623	0.658	0.219	1.41	0.962	0.878	1.429	0.909	0.871
HCM Control Delay	33.7	33.5	18.3	209.8	67.2	53.9	218	56.1	56.7
HCM Lane LOS	D	D	C	F	F	F	F	F	F
HCM 95th-tile Q	3.2	3.5	0.8	20.8	8.8	7.2	22.6	8	6.5

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	782	52	169	911	21	25	1	95	3	5	15
Future Vol, veh/h	1	782	52	169	911	21	25	1	95	3	5	15
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	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	1	850	57	184	990	23	27	1	103	3	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1013	0	0	907	0	0	1747	2262	454	1798	2279	507
Stage 1	-	-	-	-	-	-	881	881	-	1370	1370	-
Stage 2	-	-	-	-	-	-	866	1381	-	428	909	-
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	680	-	-	746	-	-	55	40	553	50	39	511
Stage 1	-	-	-	-	-	-	308	363	-	154	212	-
Stage 2	-	-	-	-	-	-	314	210	-	575	352	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	680	-	-	746	-	-	28	17	553	22	17	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	71	-	100	61	-
Stage 1	-	-	-	-	-	-	307	362	-	154	92	-
Stage 2	-	-	-	-	-	-	124	91	-	465	351	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.7	13	31
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	680	-	-	746	-	-	163
HCM Lane V/C Ratio	0.187	0.002	-	-	0.246	-	-	0.153
HCM Control Delay (s)	13	10.3	-	-	11.4	2.4	-	31
HCM Lane LOS	B	B	-	-	B	A	-	D
HCM 95th %tile Q(veh)	0.7	0	-	-	1	-	-	0.5

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	911	2	175	943	10	17	0	141	8	1	9
Future Vol, veh/h	64	911	2	175	943	10	17	0	141	8	1	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
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	70	990	2	190	1025	11	18	0	153	9	1	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1036	0	0	992	0	0	2024	2547	496	2046	2543	518
Stage 1	-	-	-	-	-	-	1131	1131	-	1411	1411	-
Stage 2	-	-	-	-	-	-	893	1416	-	635	1132	-
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	667	-	-	693	-	-	34	26	519	33	27	502
Stage 1	-	-	-	-	-	-	217	277	-	145	203	-
Stage 2	-	-	-	-	-	-	303	202	-	433	276	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	667	-	-	693	-	-	~ 13	7	519	9	7	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	1	-	39	19	-
Stage 1	-	-	-	-	-	-	166	212	-	111	71	-
Stage 2	-	-	-	-	-	-	103	71	-	234	211	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	4.3	88.8	82.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	193	667	-	-	693	-	-	65
HCM Lane V/C Ratio	0.89	0.104	-	-	0.274	-	-	0.301
HCM Control Delay (s)	88.8	11	1.1	-	12.1	2.9	-	82.7
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	6.8	0.3	-	-	1.1	-	-	1.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	464	434	619	440	467	475
Future Volume (veh/h)	464	434	619	440	467	475
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	504	472	673	478	508	0
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	576	1801	995	444	1290	
Arrive On Green	0.17	0.51	0.28	0.28	0.37	0.00
Sat Flow, veh/h	3456	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	504	472	673	478	508	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1585	1728	1585
Q Serve(g_s), s	10.7	5.7	12.6	21.0	8.1	0.0
Cycle Q Clear(g_c), s	10.7	5.7	12.6	21.0	8.1	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	576	1801	995	444	1290	
V/C Ratio(X)	0.88	0.26	0.68	1.08	0.39	
Avail Cap(c_a), veh/h	576	1801	995	444	1290	
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	0.00
Uniform Delay (d), s/veh	30.5	10.5	24.0	27.0	17.3	0.0
Incr Delay (d2), s/veh	14.1	0.1	1.8	64.9	0.9	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	5.4	2.0	5.3	15.5	3.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	10.6	25.8	91.9	18.2	0.0
LnGrp LOS	D	B	C	F	B	
Approach Vol, veh/h		976	1151		508	
Approach Delay, s/veh		28.1	53.3		18.2	
Approach LOS		C	D		B	

Timer - Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				42.5		32.5	17.0	25.5
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0		28.0	12.5	21.0
Max Q Clear Time (g_c+I1), s				7.7		10.1	12.7	23.0
Green Ext Time (p_c), s				3.4		1.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	38	67	123	62	87	151	770	29	123	671	189
Future Volume (veh/h)	142	38	67	123	62	87	151	770	29	123	671	189
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	154	41	73	134	67	95	164	837	32	134	729	205
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	223	92	164	202	99	140	176	1120	43	160	854	240
Arrive On Green	0.13	0.15	0.15	0.11	0.14	0.14	0.10	0.32	0.32	0.09	0.31	0.31
Sat Flow, veh/h	1781	603	1074	1781	700	992	1781	3490	133	1781	2739	770
Grp Volume(v), veh/h	154	0	114	134	0	162	164	426	443	134	473	461
Grp Sat Flow(s),veh/h/ln	1781	0	1677	1781	0	1692	1781	1777	1846	1781	1777	1732
Q Serve(g_s), s	4.6	0.0	3.4	4.0	0.0	5.1	5.1	11.9	11.9	4.1	13.9	13.9
Cycle Q Clear(g_c), s	4.6	0.0	3.4	4.0	0.0	5.1	5.1	11.9	11.9	4.1	13.9	13.9
Prop In Lane	1.00		0.64	1.00		0.59	1.00		0.07	1.00		0.44
Lane Grp Cap(c), veh/h	223	0	256	202	0	239	176	570	592	160	554	540
V/C Ratio(X)	0.69	0.00	0.44	0.66	0.00	0.68	0.93	0.75	0.75	0.84	0.85	0.85
Avail Cap(c_a), veh/h	831	0	783	799	0	759	176	606	630	160	590	575
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	23.3	0.0	21.5	23.7	0.0	22.7	24.9	16.9	16.9	25.0	18.0	18.0
Incr Delay (d2), s/veh	3.8	0.0	1.2	3.7	0.0	3.4	48.6	4.8	4.6	30.6	11.1	11.4
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	2.0	0.0	1.3	1.8	0.0	2.1	4.4	5.0	5.2	3.0	6.7	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	0.0	22.7	27.4	0.0	26.1	73.6	21.7	21.5	55.6	29.1	29.4
LnGrp LOS	C	A	C	C	A	C	E	C	C	E	C	C
Approach Vol, veh/h		268			296			1033			1068	
Approach Delay, s/veh		25.2			26.7			29.9			32.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	22.4	10.8	13.0	10.0	21.9	11.5	12.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	25.0	26.0	5.5	18.5	26.0	25.0
Max Q Clear Time (g_c+I1), s	6.1	13.9	6.0	5.4	7.1	15.9	6.6	7.1
Green Ext Time (p_c), s	0.0	2.4	0.3	0.6	0.0	1.5	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	531	547	106	150	19
Future Volume (veh/h)	19	531	547	106	150	19
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	21	577	595	115	163	21
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	144	864	754	146	282	36
Arrive On Green	0.50	0.50	0.50	0.50	0.18	0.18
Sat Flow, veh/h	22	1744	1523	294	1548	199
Grp Volume(v), veh/h	598	0	0	710	185	0
Grp Sat Flow(s),veh/h/ln	1766	0	0	1817	1757	0
Q Serve(g_s), s	0.3	0.0	0.0	9.0	2.7	0.0
Cycle Q Clear(g_c), s	9.3	0.0	0.0	9.0	2.7	0.0
Prop In Lane	0.04			0.16	0.88	0.11
Lane Grp Cap(c), veh/h	1008	0	0	900	321	0
V/C Ratio(X)	0.59	0.00	0.00	0.79	0.58	0.00
Avail Cap(c_a), veh/h	1273	0	0	1172	1133	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.2	0.0	0.0	5.8	10.4	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	2.8	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	1.1	0.0	0.0	1.9	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.8	0.0	0.0	8.6	12.1	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		598	710		185	
Approach Delay, s/veh		5.8	8.6		12.1	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	18.3	9.6	18.3
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	11.3	4.7	11.0
Green Ext Time (p_c), s	2.2	0.4	2.8

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	688	795	436	226
Demand Flow Rate, veh/h	702	811	445	230
Vehicles Circulating, veh/h	393	305	685	850
Vehicles Exiting, veh/h	687	825	410	266
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.6	7.5	13.2	9.6
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	330	372	381	430	445	230
Cap Entry Lane, veh/h	940	1017	1020	1096	793	689
Entry HV Adj Factor	0.980	0.980	0.981	0.980	0.980	0.982
Flow Entry, veh/h	323	365	374	422	436	226
Cap Entry, veh/h	921	997	1001	1074	777	677
V/C Ratio	0.351	0.366	0.374	0.392	0.561	0.334
Control Delay, s/veh	7.8	7.5	7.6	7.5	13.2	9.6
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	2	2	2	4	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	504	72	204	484	43	78	140	183	57	94	57
Future Volume (veh/h)	57	504	72	204	484	43	78	140	183	57	94	57
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	62	548	78	222	526	47	85	152	199	62	102	62
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	112	868	123	231	1137	101	240	306	385	171	180	88
Arrive On Green	0.06	0.28	0.28	0.13	0.34	0.34	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3124	443	1781	3300	294	469	1258	1585	214	741	361
Grp Volume(v), veh/h	62	311	315	222	283	290	237	0	199	226	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1791	1781	1777	1817	1727	0	1585	1316	0	0
Q Serve(g_s), s	1.3	5.9	6.0	4.8	4.8	4.8	0.0	0.0	4.2	2.1	0.0	0.0
Cycle Q Clear(g_c), s	1.3	5.9	6.0	4.8	4.8	4.8	4.4	0.0	4.2	6.5	0.0	0.0
Prop In Lane	1.00		0.25	1.00		0.16	0.36		1.00	0.27		0.27
Lane Grp Cap(c), veh/h	112	494	498	231	612	626	546	0	385	438	0	0
V/C Ratio(X)	0.55	0.63	0.63	0.96	0.46	0.46	0.43	0.00	0.52	0.52	0.00	0.00
Avail Cap(c_a), veh/h	231	829	835	231	829	848	897	0	739	767	0	0
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	0.00
Uniform Delay (d), s/veh	17.6	12.2	12.2	16.7	9.9	9.9	12.7	0.0	12.7	13.2	0.0	0.0
Incr Delay (d2), s/veh	4.2	1.3	1.3	48.5	0.5	0.5	0.5	0.0	1.1	0.9	0.0	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	0.6	2.0	2.0	4.7	1.5	1.5	1.5	0.0	1.3	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	13.5	13.6	65.2	10.4	10.4	13.2	0.0	13.7	14.2	0.0	0.0
LnGrp LOS	C	B	B	E	B	B	B	A	B	B	A	A
Approach Vol, veh/h		688			795			436			226	
Approach Delay, s/veh		14.3			25.7			13.5			14.2	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.9	9.5	15.2		13.9	6.9	17.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.0	18.0		18.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s		6.4	6.8	8.0		8.5	3.3	6.8				
Green Ext Time (p_c), s		1.7	0.0	2.8		0.9	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	839	882	397	3
Demand Flow Rate, veh/h	856	900	405	3
Vehicles Circulating, veh/h	132	63	847	934
Vehicles Exiting, veh/h	805	1189	141	29
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	6.0	15.5	5.7
Approach LOS	A	A	C	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	402	454	423	477	405	3
Cap Entry Lane, veh/h	1195	1269	1274	1346	691	642
Entry HV Adj Factor	0.981	0.979	0.980	0.980	0.980	1.000
Flow Entry, veh/h	394	445	415	467	397	3
Cap Entry, veh/h	1173	1243	1248	1319	678	642
V/C Ratio	0.336	0.358	0.332	0.354	0.586	0.005
Control Delay, s/veh	6.3	6.3	6.0	6.0	15.5	5.7
LOS	A	A	A	A	C	A
95th %tile Queue, veh	1	2	1	2	4	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	738	9	118	694	0	30	1	334	1	0	2
Future Volume (veh/h)	25	738	9	118	694	0	30	1	334	1	0	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	27	802	10	128	754	0	33	1	363	1	0	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	57	1102	14	163	1303	0	107	20	440	211	46	303
Arrive On Green	0.03	0.31	0.31	0.09	0.37	0.00	0.30	0.30	0.30	0.30	0.00	0.30
Sat Flow, veh/h	1781	3594	45	1781	3647	0	70	66	1451	347	152	998
Grp Volume(v), veh/h	27	396	416	128	754	0	397	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	0	1587	0	0	1496	0	0
Q Serve(g_s), s	0.7	9.0	9.0	3.2	7.7	0.0	4.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.0	9.0	3.2	7.7	0.0	10.5	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.08		0.91	0.33		0.67
Lane Grp Cap(c), veh/h	57	545	571	163	1303	0	567	0	0	560	0	0
V/C Ratio(X)	0.48	0.73	0.73	0.78	0.58	0.00	0.70	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	197	707	741	217	1453	0	716	0	0	686	0	0
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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.5	14.0	14.0	20.1	11.5	0.0	14.6	0.0	0.0	11.0	0.0	0.0
Incr Delay (d2), s/veh	6.1	2.7	2.6	12.6	0.5	0.0	2.2	0.0	0.0	0.0	0.0	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	0.4	3.4	3.5	1.7	2.5	0.0	3.4	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	16.7	16.6	32.7	12.0	0.0	16.8	0.0	0.0	11.0	0.0	0.0
LnGrp LOS	C	B	B	C	B	A	B	A	A	B	A	A
Approach Vol, veh/h		839			882			397			3	
Approach Delay, s/veh		17.0			15.0			16.8			11.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	8.7	18.4		18.2	5.9	21.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.5	18.0		18.0	5.0	18.5				
Max Q Clear Time (g_c+I1), s		12.5	5.2	11.0		2.1	2.7	9.7				
Green Ext Time (p_c), s		1.2	0.0	2.9		0.0	0.0	3.4				

Intersection Summary			
HCM 6th Ctrl Delay			16.1
HCM 6th LOS			B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	519	589	117	129	28
Future Volume (veh/h)	47	519	589	117	129	28
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	51	564	640	127	140	30
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	156	740	796	158	243	52
Arrive On Green	0.53	0.53	0.53	0.53	0.17	0.17
Sat Flow, veh/h	46	1409	1515	301	1428	306
Grp Volume(v), veh/h	615	0	0	767	171	0
Grp Sat Flow(s),veh/h/ln	1455	0	0	1816	1744	0
Q Serve(g_s), s	1.7	0.0	0.0	10.3	2.7	0.0
Cycle Q Clear(g_c), s	11.9	0.0	0.0	10.3	2.7	0.0
Prop In Lane	0.08			0.17	0.82	0.18
Lane Grp Cap(c), veh/h	896	0	0	954	297	0
V/C Ratio(X)	0.69	0.00	0.00	0.80	0.58	0.00
Avail Cap(c_a), veh/h	1033	0	0	1105	1061	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.2	0.0	0.0	5.8	11.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	3.9	1.8	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	1.3	0.0	0.0	2.4	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.8	0.0	0.0	9.6	13.0	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		615	767		171	
Approach Delay, s/veh		6.8	9.6		13.0	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	20.0	9.5	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	13.9	4.7	12.3
Green Ext Time (p_c), s	1.6	0.4	2.6

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	858	966	342	235
Demand Flow Rate, veh/h	876	985	350	239
Vehicles Circulating, veh/h	409	251	859	1005
Vehicles Exiting, veh/h	835	958	426	231
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.2	8.1	13.4	11.9
Approach LOS	A	A	B	B

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	412	464	463	522	350	239
Cap Entry Lane, veh/h	927	1003	1072	1147	684	604
Entry HV Adj Factor	0.979	0.980	0.980	0.980	0.978	0.983
Flow Entry, veh/h	403	455	454	512	342	235
Cap Entry, veh/h	907	983	1050	1125	669	594
V/C Ratio	0.445	0.463	0.432	0.455	0.512	0.395
Control Delay, s/veh	9.3	9.1	8.2	8.1	13.4	11.9
LOS	A	A	A	A	B	B
95th %tile Queue, veh	2	2	2	2	3	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	634	80	209	620	60	77	73	165	65	95	56
Future Volume (veh/h)	75	634	80	209	620	60	77	73	165	65	95	56
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	82	689	87	227	674	65	84	79	179	71	103	61
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	128	969	122	288	1292	125	271	216	356	173	170	83
Arrive On Green	0.07	0.31	0.31	0.16	0.39	0.39	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3175	401	1781	3275	316	652	961	1585	292	758	368
Grp Volume(v), veh/h	82	385	391	227	365	374	163	0	179	235	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1814	1613	0	1585	1418	0	0
Q Serve(g_s), s	2.0	8.4	8.4	5.4	6.9	6.9	0.0	0.0	4.3	3.4	0.0	0.0
Cycle Q Clear(g_c), s	2.0	8.4	8.4	5.4	6.9	6.9	3.5	0.0	4.3	6.9	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.17	0.52		1.00	0.30		0.26
Lane Grp Cap(c), veh/h	128	542	549	288	701	716	487	0	356	426	0	0
V/C Ratio(X)	0.64	0.71	0.71	0.79	0.52	0.52	0.33	0.00	0.50	0.55	0.00	0.00
Avail Cap(c_a), veh/h	285	731	739	427	873	891	761	0	652	705	0	0
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	0.00
Uniform Delay (d), s/veh	19.8	13.5	13.5	17.6	10.1	10.1	14.5	0.0	14.8	15.8	0.0	0.0
Incr Delay (d2), s/veh	5.2	2.1	2.1	5.8	0.6	0.6	0.4	0.0	1.1	1.1	0.0	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	0.9	3.1	3.1	2.4	2.2	2.2	1.2	0.0	1.4	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	15.6	15.6	23.4	10.7	10.7	14.9	0.0	15.9	16.9	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	A
Approach Vol, veh/h		858			966			342			235	
Approach Delay, s/veh		16.5			13.7			15.4			16.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		14.3	11.6	17.9		14.3	7.7	21.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	7.0	21.5
Max Q Clear Time (g_c+I1), s		6.3	7.4	10.4		8.9	4.0	8.9
Green Ext Time (p_c), s		1.2	0.2	2.9		0.9	0.0	3.8

Intersection Summary			
HCM 6th Ctrl Delay			15.2
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1038	1254	248	13
Demand Flow Rate, veh/h	1058	1279	253	13
Vehicles Circulating, veh/h	193	102	1043	1300
Vehicles Exiting, veh/h	1120	1194	208	81
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	8.4	13.1	8.0
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	497	561	601	678	253	13
Cap Entry Lane, veh/h	1130	1205	1229	1302	585	470
Entry HV Adj Factor	0.982	0.981	0.981	0.980	0.980	1.000
Flow Entry, veh/h	488	550	589	665	248	13
Cap Entry, veh/h	1109	1182	1205	1276	574	470
V/C Ratio	0.440	0.465	0.489	0.521	0.432	0.028
Control Delay, s/veh	8.0	8.0	8.3	8.4	13.1	8.0
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	3	3	3	2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	875	14	174	972	7	26	0	202	0	0	12
Future Volume (veh/h)	66	875	14	174	972	7	26	0	202	0	0	12
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	951	15	189	1057	8	28	0	220	0	0	13
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	118	1247	20	241	1509	11	111	17	301	0	0	340
Arrive On Green	0.07	0.35	0.35	0.14	0.42	0.42	0.21	0.00	0.21	0.00	0.00	0.21
Sat Flow, veh/h	1781	3581	56	1781	3615	27	100	79	1405	0	0	1585
Grp Volume(v), veh/h	72	472	494	189	520	545	248	0	0	0	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1865	1584	0	0	0	0	1585
Q Serve(g_s), s	1.8	10.5	10.5	4.6	10.8	10.8	2.3	0.0	0.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s	1.8	10.5	10.5	4.6	10.8	10.8	6.5	0.0	0.0	0.0	0.0	0.3
Prop In Lane	1.00		0.03	1.00		0.01	0.11		0.89	0.00		1.00
Lane Grp Cap(c), veh/h	118	619	648	241	742	779	429	0	0	0	0	340
V/C Ratio(X)	0.61	0.76	0.76	0.78	0.70	0.70	0.58	0.00	0.00	0.00	0.00	0.04
Avail Cap(c_a), veh/h	203	736	770	339	871	915	776	0	0	0	0	692
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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	12.9	12.9	18.7	10.7	10.7	16.3	0.0	0.0	0.0	0.0	13.9
Incr Delay (d2), s/veh	5.0	3.9	3.8	7.7	2.1	2.0	1.2	0.0	0.0	0.0	0.0	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	0.8	4.0	4.2	2.2	3.6	3.8	2.2	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	16.9	16.7	26.4	12.8	12.7	17.5	0.0	0.0	0.0	0.0	13.9
LnGrp LOS	C	B	B	C	B	B	B	A	A	A	A	B
Approach Vol, veh/h		1038			1254			248			13	
Approach Delay, s/veh		17.4			14.8			17.5			13.9	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.1	10.5	20.1		14.1	7.5	23.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	8.5	18.5		19.5	5.1	21.9				
Max Q Clear Time (g_c+I1), s		8.5	6.6	12.5		2.3	3.8	12.8				
Green Ext Time (p_c), s		1.1	0.1	3.0		0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			16.1									
HCM 6th LOS			B									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	44	561	585	108	129	30
Future Volume (veh/h)	44	561	585	108	129	30
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	48	610	636	117	140	33
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	153	767	803	148	242	57
Arrive On Green	0.52	0.52	0.52	0.52	0.17	0.17
Sat Flow, veh/h	43	1467	1537	283	1401	330
Grp Volume(v), veh/h	658	0	0	753	174	0
Grp Sat Flow(s),veh/h/ln	1511	0	0	1819	1741	0
Q Serve(g_s), s	1.6	0.0	0.0	10.0	2.7	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	10.0	2.7	0.0
Prop In Lane	0.07			0.16	0.80	0.19
Lane Grp Cap(c), veh/h	921	0	0	951	300	0
V/C Ratio(X)	0.71	0.00	0.00	0.79	0.58	0.00
Avail Cap(c_a), veh/h	1066	0	0	1109	1061	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.4	0.0	0.0	5.7	11.2	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	3.4	1.8	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	1.5	0.0	0.0	2.2	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.3	0.0	0.0	9.2	13.0	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		658	753		174	
Approach Delay, s/veh		7.3	9.2		13.0	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	19.9	9.6	19.9
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	13.6	4.7	12.0
Green Ext Time (p_c), s	1.8	0.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	784	1020	337	231
Demand Flow Rate, veh/h	800	1040	344	235
Vehicles Circulating, veh/h	444	225	784	1060
Vehicles Exiting, veh/h	851	903	460	205
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.0	8.2	11.8	12.7
Approach LOS	A	A	B	B

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	376	424	489	551	344	235
Cap Entry Lane, veh/h	897	974	1097	1173	729	577
Entry HV Adj Factor	0.980	0.980	0.981	0.981	0.978	0.983
Flow Entry, veh/h	369	416	480	541	337	231
Cap Entry, veh/h	879	954	1076	1151	713	567
V/C Ratio	0.419	0.435	0.446	0.470	0.472	0.407
Control Delay, s/veh	9.1	8.8	8.2	8.2	11.8	12.7
LOS	A	A	A	A	B	B
95th %tile Queue, veh	2	2	2	3	3	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	590	74	246	634	59	76	69	165	60	96	57
Future Volume (veh/h)	58	590	74	246	634	59	76	69	165	60	96	57
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	641	80	267	689	64	83	75	179	65	104	62
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	109	920	115	331	1361	126	271	207	345	165	171	85
Arrive On Green	0.06	0.29	0.29	0.19	0.41	0.41	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3180	396	1781	3287	305	670	949	1585	274	787	389
Grp Volume(v), veh/h	63	358	363	267	372	381	158	0	179	231	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1799	1781	1777	1815	1619	0	1585	1450	0	0
Q Serve(g_s), s	1.5	7.9	7.9	6.3	6.8	6.8	0.0	0.0	4.4	3.3	0.0	0.0
Cycle Q Clear(g_c), s	1.5	7.9	7.9	6.3	6.8	6.8	3.4	0.0	4.4	6.7	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.17	0.53		1.00	0.28		0.27
Lane Grp Cap(c), veh/h	109	514	521	331	736	752	477	0	345	421	0	0
V/C Ratio(X)	0.58	0.70	0.70	0.81	0.51	0.51	0.33	0.00	0.52	0.55	0.00	0.00
Avail Cap(c_a), veh/h	259	728	737	425	893	913	758	0	649	711	0	0
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	0.00
Uniform Delay (d), s/veh	20.1	13.9	13.9	17.1	9.5	9.5	14.7	0.0	15.2	16.0	0.0	0.0
Incr Delay (d2), s/veh	4.8	1.7	1.7	8.6	0.5	0.5	0.4	0.0	1.2	1.1	0.0	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	0.7	2.8	2.9	3.0	2.1	2.2	1.2	0.0	1.5	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	15.6	15.6	25.7	10.1	10.1	15.1	0.0	16.4	17.1	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	A
Approach Vol, veh/h		784			1020			337			231	
Approach Delay, s/veh		16.4			14.2			15.8			17.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.1	12.7	17.2		14.1	7.2	22.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	6.4	22.1				
Max Q Clear Time (g_c+I1), s		6.4	8.3	9.9		8.7	3.5	8.8				
Green Ext Time (p_c), s		1.2	0.2	2.8		0.9	0.0	4.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.4									
HCM 6th LOS			B									

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1040	1200	168	20
Demand Flow Rate, veh/h	1060	1224	171	20
Vehicles Circulating, veh/h	200	87	1067	1231
Vehicles Exiting, veh/h	1051	1151	193	80
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.1	7.8	10.6	7.7
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	498	562	575	649	171	20
Cap Entry Lane, veh/h	1123	1198	1246	1319	573	499
Entry HV Adj Factor	0.981	0.980	0.981	0.980	0.982	0.999
Flow Entry, veh/h	489	551	564	636	168	20
Cap Entry, veh/h	1102	1175	1222	1292	563	498
V/C Ratio	0.443	0.469	0.461	0.492	0.298	0.040
Control Delay, s/veh	8.1	8.1	7.8	7.9	10.6	7.7
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	3	2	3	1	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	892	2	171	923	10	17	0	138	8	1	9
Future Volume (veh/h)	63	892	2	171	923	10	17	0	138	8	1	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	68	970	2	186	1003	11	18	0	150	9	1	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	117	1351	3	239	1583	17	113	12	233	208	53	134
Arrive On Green	0.07	0.37	0.37	0.13	0.44	0.44	0.16	0.00	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3638	8	1781	3601	39	95	74	1414	489	324	814
Grp Volume(v), veh/h	68	474	498	186	495	519	168	0	0	20	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1863	1584	0	0	1627	0	0
Q Serve(g_s), s	1.5	9.4	9.4	4.1	8.9	8.9	1.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.5	9.4	9.4	4.1	8.9	8.9	4.0	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.11		0.89	0.45		0.50
Lane Grp Cap(c), veh/h	117	660	694	239	781	819	358	0	0	395	0	0
V/C Ratio(X)	0.58	0.72	0.72	0.78	0.63	0.63	0.47	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	222	847	891	370	995	1043	808	0	0	803	0	0
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	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.6	11.0	11.0	17.1	8.9	8.9	15.9	0.0	0.0	14.4	0.0	0.0
Incr Delay (d2), s/veh	4.5	2.1	2.0	5.5	0.9	0.8	1.0	0.0	0.0	0.1	0.0	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	0.7	3.1	3.3	1.8	2.6	2.7	1.3	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	13.1	13.0	22.6	9.8	9.7	16.9	0.0	0.0	14.5	0.0	0.0
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1040			1200			168			20	
Approach Delay, s/veh		13.7			11.7			16.9			14.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.2	10.0	19.7		11.2	7.2	22.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	8.5	19.5		18.5	5.1	22.9				
Max Q Clear Time (g_c+I1), s		6.0	6.1	11.4		2.4	3.5	10.9				
Green Ext Time (p_c), s		0.7	0.1	3.8		0.0	0.0	5.2				

Intersection Summary			
HCM 6th Ctrl Delay			13.0
HCM 6th LOS			B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	542	559	108	153	19
Future Volume (veh/h)	19	542	559	108	153	19
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	21	589	608	117	166	21
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	142	863	761	146	284	36
Arrive On Green	0.50	0.50	0.50	0.50	0.18	0.18
Sat Flow, veh/h	20	1727	1524	293	1552	196
Grp Volume(v), veh/h	610	0	0	725	188	0
Grp Sat Flow(s),veh/h/ln	1748	0	0	1818	1757	0
Q Serve(g_s), s	0.4	0.0	0.0	9.4	2.8	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0	9.4	2.8	0.0
Prop In Lane	0.03			0.16	0.88	0.11
Lane Grp Cap(c), veh/h	1004	0	0	908	322	0
V/C Ratio(X)	0.61	0.00	0.00	0.80	0.58	0.00
Avail Cap(c_a), veh/h	1245	0	0	1154	1116	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.3	0.0	0.0	5.9	10.6	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	3.2	1.7	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	1.1	0.0	0.0	2.1	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.9	0.0	0.0	9.1	12.3	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		610	725		188	
Approach Delay, s/veh		5.9	9.1		12.3	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	18.7	9.7	18.7
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	11.8	4.8	11.4
Green Ext Time (p_c), s	2.2	0.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	703	812	445	230
Demand Flow Rate, veh/h	717	829	454	234
Vehicles Circulating, veh/h	401	311	699	869
Vehicles Exiting, veh/h	702	842	419	271
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	7.7	13.8	9.9
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	337	380	390	439	454	234
Cap Entry Lane, veh/h	933	1010	1014	1090	784	678
Entry HV Adj Factor	0.980	0.980	0.979	0.981	0.980	0.983
Flow Entry, veh/h	330	372	382	430	445	230
Cap Entry, veh/h	915	990	993	1069	768	667
V/C Ratio	0.361	0.376	0.385	0.403	0.579	0.345
Control Delay, s/veh	7.9	7.7	7.8	7.6	13.8	9.9
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	2	2	2	4	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	515	74	208	495	44	80	143	187	58	96	58
Future Volume (veh/h)	58	515	74	208	495	44	80	143	187	58	96	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	63	560	80	226	538	48	87	155	203	63	104	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	110	848	121	288	1226	109	229	300	390	159	178	86
Arrive On Green	0.06	0.27	0.27	0.16	0.37	0.37	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3122	445	1781	3301	294	458	1220	1585	204	723	350
Grp Volume(v), veh/h	63	318	322	226	289	297	242	0	203	230	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1781	1777	1817	1678	0	1585	1277	0	0
Q Serve(g_s), s	1.4	6.7	6.7	5.1	5.1	5.2	0.0	0.0	4.7	2.4	0.0	0.0
Cycle Q Clear(g_c), s	1.4	6.7	6.7	5.1	5.1	5.2	5.1	0.0	4.7	7.5	0.0	0.0
Prop In Lane	1.00		0.25	1.00		0.16	0.36		1.00	0.27		0.27
Lane Grp Cap(c), veh/h	110	483	486	288	660	675	529	0	390	423	0	0
V/C Ratio(X)	0.57	0.66	0.66	0.78	0.44	0.44	0.46	0.00	0.52	0.54	0.00	0.00
Avail Cap(c_a), veh/h	271	760	765	444	933	954	814	0	678	689	0	0
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	0.00
Uniform Delay (d), s/veh	19.2	13.6	13.6	16.9	9.9	9.9	13.8	0.0	13.7	14.5	0.0	0.0
Incr Delay (d2), s/veh	4.6	1.5	1.6	5.0	0.5	0.5	0.6	0.0	1.1	1.1	0.0	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	0.7	2.4	2.4	2.2	1.6	1.7	1.8	0.0	1.5	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	15.1	15.2	21.9	10.4	10.4	14.4	0.0	14.8	15.6	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	A
Approach Vol, veh/h		703			812			445			230	
Approach Delay, s/veh		15.9			13.6			14.6			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.9	11.3	15.9		14.9	7.1	20.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	6.4	22.1				
Max Q Clear Time (g_c+I1), s		7.1	7.1	8.7		9.5	3.4	7.2				
Green Ext Time (p_c), s		1.6	0.2	2.7		0.9	0.0	3.1				

Intersection Summary			
HCM 6th Ctrl Delay			14.8
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	857	903	407	3
Demand Flow Rate, veh/h	874	921	415	3
Vehicles Circulating, veh/h	136	64	865	956
Vehicles Exiting, veh/h	823	1216	145	29
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	6.1	16.5	5.8
Approach LOS	A	A	C	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	411	463	433	488	415	3
Cap Entry Lane, veh/h	1191	1265	1273	1345	681	630
Entry HV Adj Factor	0.980	0.981	0.980	0.980	0.981	1.000
Flow Entry, veh/h	403	454	424	478	407	3
Cap Entry, veh/h	1167	1240	1247	1318	668	630
V/C Ratio	0.345	0.366	0.340	0.363	0.610	0.005
Control Delay, s/veh	6.4	6.4	6.1	6.1	16.5	5.8
LOS	A	A	A	A	C	A
95th %tile Queue, veh	2	2	2	2	4	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	754	9	121	709	0	31	1	342	1	0	2
Future Volume (veh/h)	25	754	9	121	709	0	31	1	342	1	0	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	27	820	10	132	771	0	34	1	372	1	0	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	56	1106	13	168	1317	0	106	20	445	208	45	301
Arrive On Green	0.03	0.31	0.31	0.09	0.37	0.00	0.31	0.31	0.31	0.31	0.00	0.31
Sat Flow, veh/h	1781	3595	44	1781	3647	0	71	65	1450	342	148	980
Grp Volume(v), veh/h	27	405	425	132	771	0	407	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	0	1587	0	0	1470	0	0
Q Serve(g_s), s	0.7	9.5	9.5	3.4	8.1	0.0	4.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.5	9.5	3.4	8.1	0.0	11.1	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.08		0.91	0.33		0.67
Lane Grp Cap(c), veh/h	56	547	573	168	1317	0	571	0	0	554	0	0
V/C Ratio(X)	0.48	0.74	0.74	0.78	0.59	0.00	0.71	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	192	689	723	211	1417	0	698	0	0	663	0	0
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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.1	14.4	14.4	20.5	11.7	0.0	14.9	0.0	0.0	11.2	0.0	0.0
Incr Delay (d2), s/veh	6.2	3.2	3.1	13.9	0.5	0.0	2.7	0.0	0.0	0.0	0.0	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	0.4	3.7	3.8	1.9	2.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	17.6	17.5	34.5	12.3	0.0	17.6	0.0	0.0	11.2	0.0	0.0
LnGrp LOS	C	B	B	C	B	A	B	A	A	B	A	A
Approach Vol, veh/h		857			903			407			3	
Approach Delay, s/veh		17.9			15.5			17.6			11.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.7	8.9	18.8		18.7	6.0	21.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.5	18.0		18.0	5.0	18.5				
Max Q Clear Time (g_c+I1), s		13.1	5.4	11.5		2.1	2.7	10.1				
Green Ext Time (p_c), s		1.2	0.0	2.8		0.0	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	531	602	120	132	29
Future Volume (veh/h)	48	531	602	120	132	29
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	52	577	654	130	143	32
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	152	736	805	160	243	54
Arrive On Green	0.53	0.53	0.53	0.53	0.17	0.17
Sat Flow, veh/h	45	1385	1515	301	1416	317
Grp Volume(v), veh/h	629	0	0	784	176	0
Grp Sat Flow(s),veh/h/ln	1430	0	0	1816	1743	0
Q Serve(g_s), s	2.0	0.0	0.0	10.8	2.8	0.0
Cycle Q Clear(g_c), s	12.7	0.0	0.0	10.8	2.8	0.0
Prop In Lane	0.08			0.17	0.81	0.18
Lane Grp Cap(c), veh/h	889	0	0	965	299	0
V/C Ratio(X)	0.71	0.00	0.00	0.81	0.59	0.00
Avail Cap(c_a), veh/h	991	0	0	1079	1035	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.3	0.0	0.0	5.9	11.6	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	4.4	1.8	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	1.5	0.0	0.0	2.7	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.3	0.0	0.0	10.2	13.4	0.0
LnGrp LOS	A	A	A	B	B	A
Approach Vol, veh/h		629	784		176	
Approach Delay, s/veh		7.3	10.2		13.4	
Approach LOS		A	B		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	20.6	9.7	20.6
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	14.7	4.8	12.8
Green Ext Time (p_c), s	1.4	0.4	2.5

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	10.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	876	988	350	239
Demand Flow Rate, veh/h	894	1008	358	243
Vehicles Circulating, veh/h	418	255	876	1029
Vehicles Exiting, veh/h	854	979	436	234
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.5	8.4	14.1	12.5
Approach LOS	A	A	B	B

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	420	474	474	534	358	243
Cap Entry Lane, veh/h	919	995	1068	1143	674	592
Entry HV Adj Factor	0.980	0.979	0.980	0.981	0.979	0.983
Flow Entry, veh/h	412	464	464	524	350	239
Cap Entry, veh/h	901	975	1046	1121	660	582
V/C Ratio	0.457	0.476	0.444	0.467	0.531	0.410
Control Delay, s/veh	9.6	9.4	8.4	8.3	14.1	12.5
LOS	A	A	A	A	B	B
95th %tile Queue, veh	2	3	2	3	3	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	648	82	214	634	61	79	74	169	66	97	57
Future Volume (veh/h)	76	648	82	214	634	61	79	74	169	66	97	57
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	83	704	89	233	689	66	86	80	184	72	105	62
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	128	971	123	294	1308	125	269	213	362	170	172	83
Arrive On Green	0.07	0.31	0.31	0.16	0.40	0.40	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3174	401	1781	3277	314	647	933	1585	286	752	363
Grp Volume(v), veh/h	83	394	399	233	373	382	166	0	184	239	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1814	1579	0	1585	1401	0	0
Q Serve(g_s), s	2.0	8.9	8.9	5.6	7.2	7.2	0.0	0.0	4.5	3.6	0.0	0.0
Cycle Q Clear(g_c), s	2.0	8.9	8.9	5.6	7.2	7.2	3.7	0.0	4.5	7.4	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.17	0.52		1.00	0.30		0.26
Lane Grp Cap(c), veh/h	128	544	550	294	709	724	482	0	362	424	0	0
V/C Ratio(X)	0.65	0.72	0.73	0.79	0.53	0.53	0.34	0.00	0.51	0.56	0.00	0.00
Avail Cap(c_a), veh/h	282	712	721	417	847	865	735	0	635	682	0	0
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	0.00
Uniform Delay (d), s/veh	20.3	13.9	13.9	18.0	10.3	10.3	14.7	0.0	15.1	16.1	0.0	0.0
Incr Delay (d2), s/veh	5.4	2.5	2.5	6.8	0.6	0.6	0.4	0.0	1.1	1.2	0.0	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	0.9	3.3	3.3	2.6	2.3	2.3	1.3	0.0	1.5	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	16.4	16.4	24.8	10.9	10.9	15.2	0.0	16.2	17.3	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	A
Approach Vol, veh/h		876			988			350			239	
Approach Delay, s/veh		17.3			14.2			15.7			17.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	11.9	18.2		14.8	7.7	22.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	7.1	21.4				
Max Q Clear Time (g_c+I1), s		6.5	7.6	10.9		9.4	4.0	9.2				
Green Ext Time (p_c), s		1.2	0.2	2.9		0.9	0.0	3.8				

Intersection Summary			
HCM 6th Ctrl Delay			15.8
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1060	1280	254	13
Demand Flow Rate, veh/h	1080	1306	260	13
Vehicles Circulating, veh/h	197	104	1065	1328
Vehicles Exiting, veh/h	1144	1220	212	82
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.2	8.6	13.9	8.2
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	508	572	614	692	260	13
Cap Entry Lane, veh/h	1126	1201	1227	1300	574	459
Entry HV Adj Factor	0.980	0.982	0.980	0.981	0.977	1.000
Flow Entry, veh/h	498	562	602	679	254	13
Cap Entry, veh/h	1104	1179	1202	1275	561	459
V/C Ratio	0.451	0.476	0.501	0.532	0.453	0.028
Control Delay, s/veh	8.2	8.2	8.5	8.7	13.9	8.2
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	3	3	3	2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	894	14	178	993	7	27	0	207	0	0	12
Future Volume (veh/h)	67	894	14	178	993	7	27	0	207	0	0	12
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	972	15	193	1079	8	29	0	225	0	0	13
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	118	1251	19	245	1521	11	110	17	304	0	0	344
Arrive On Green	0.07	0.35	0.35	0.14	0.42	0.42	0.22	0.00	0.22	0.00	0.00	0.22
Sat Flow, veh/h	1781	3582	55	1781	3616	27	102	79	1403	0	0	1585
Grp Volume(v), veh/h	73	482	505	193	530	557	254	0	0	0	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1866	1584	0	0	0	0	1585
Q Serve(g_s), s	1.8	11.0	11.0	4.8	11.2	11.2	2.5	0.0	0.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s	1.8	11.0	11.0	4.8	11.2	11.2	6.8	0.0	0.0	0.0	0.0	0.3
Prop In Lane	1.00		0.03	1.00		0.01	0.11		0.89	0.00		1.00
Lane Grp Cap(c), veh/h	118	621	650	245	748	785	432	0	0	0	0	344
V/C Ratio(X)	0.62	0.78	0.78	0.79	0.71	0.71	0.59	0.00	0.00	0.00	0.00	0.04
Avail Cap(c_a), veh/h	199	721	755	332	854	896	761	0	0	0	0	678
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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	13.2	13.2	19.0	10.9	10.9	16.6	0.0	0.0	0.0	0.0	14.1
Incr Delay (d2), s/veh	5.2	4.6	4.4	8.6	2.3	2.2	1.3	0.0	0.0	0.0	0.0	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	0.8	4.3	4.5	2.3	3.9	4.0	2.3	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	17.9	17.7	27.6	13.2	13.1	17.9	0.0	0.0	0.0	0.0	14.1
LnGrp LOS	C	B	B	C	B	B	B	A	A	A	A	B
Approach Vol, veh/h		1060			1280			254			13	
Approach Delay, s/veh		18.3			15.4			17.9			14.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		14.4	10.8	20.4		14.4	7.5	23.7
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		19.5	8.5	18.5		19.5	5.1	21.9
Max Q Clear Time (g_c+I1), s		8.8	6.8	13.0		2.3	3.8	13.2
Green Ext Time (p_c), s		1.1	0.1	2.9		0.0	0.0	4.5

Intersection Summary		
HCM 6th Ctrl Delay		16.8
HCM 6th LOS		B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	573	598	110	132	31
Future Volume (veh/h)	45	573	598	110	132	31
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	49	623	650	120	143	34
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	150	767	813	150	242	58
Arrive On Green	0.53	0.53	0.53	0.53	0.17	0.17
Sat Flow, veh/h	42	1448	1536	284	1398	332
Grp Volume(v), veh/h	672	0	0	770	178	0
Grp Sat Flow(s),veh/h/ln	1490	0	0	1819	1741	0
Q Serve(g_s), s	2.0	0.0	0.0	10.4	2.9	0.0
Cycle Q Clear(g_c), s	12.5	0.0	0.0	10.4	2.9	0.0
Prop In Lane	0.07			0.16	0.80	0.19
Lane Grp Cap(c), veh/h	917	0	0	964	301	0
V/C Ratio(X)	0.73	0.00	0.00	0.80	0.59	0.00
Avail Cap(c_a), veh/h	1025	0	0	1082	1035	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.5	0.0	0.0	5.8	11.5	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	3.9	1.8	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	1.7	0.0	0.0	2.5	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.9	0.0	0.0	9.7	13.4	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		672	770		178	
Approach Delay, s/veh		7.9	9.7		13.4	
Approach LOS		A	A		B	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				20.5		9.7		20.5
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				18.0		18.0		18.0
Max Q Clear Time (g_c+I1), s				14.5		4.9		12.4
Green Ext Time (p_c), s				1.6		0.4		2.6

Intersection Summary			
HCM 6th Ctrl Delay			9.4
HCM 6th LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	802	1042	343	236
Demand Flow Rate, veh/h	818	1062	351	240
Vehicles Circulating, veh/h	454	229	800	1082
Vehicles Exiting, veh/h	868	922	472	209
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.2	8.4	12.3	13.3
Approach LOS	A	A	B	B

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.469	0.531	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	384	434	499	563	351	240
Cap Entry Lane, veh/h	889	965	1093	1169	719	566
Entry HV Adj Factor	0.981	0.979	0.981	0.981	0.979	0.983
Flow Entry, veh/h	377	425	490	552	343	236
Cap Entry, veh/h	873	945	1073	1147	704	556
V/C Ratio	0.432	0.450	0.456	0.482	0.488	0.424
Control Delay, s/veh	9.4	9.1	8.4	8.4	12.3	13.3
LOS	A	A	A	A	B	B
95th %tile Queue, veh	2	2	2	3	3	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	603	76	251	648	60	77	70	168	61	98	58
Future Volume (veh/h)	59	603	76	251	648	60	77	70	168	61	98	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	64	655	83	273	704	65	84	76	183	66	107	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	109	923	117	336	1376	127	268	205	350	162	174	85
Arrive On Green	0.06	0.29	0.29	0.19	0.42	0.42	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3173	402	1781	3289	303	660	928	1585	270	785	384
Grp Volume(v), veh/h	64	366	372	273	380	389	160	0	183	236	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1816	1588	0	1585	1439	0	0
Q Serve(g_s), s	1.6	8.3	8.3	6.6	7.1	7.1	0.0	0.0	4.6	3.5	0.0	0.0
Cycle Q Clear(g_c), s	1.6	8.3	8.3	6.6	7.1	7.1	3.6	0.0	4.6	7.1	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.17	0.52		1.00	0.28		0.27
Lane Grp Cap(c), veh/h	109	517	523	336	743	760	473	0	350	420	0	0
V/C Ratio(X)	0.59	0.71	0.71	0.81	0.51	0.51	0.34	0.00	0.52	0.56	0.00	0.00
Avail Cap(c_a), veh/h	253	709	718	415	871	890	733	0	633	690	0	0
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	0.00
Uniform Delay (d), s/veh	20.6	14.3	14.3	17.5	9.7	9.7	15.0	0.0	15.5	16.3	0.0	0.0
Incr Delay (d2), s/veh	5.0	2.0	2.0	9.7	0.5	0.5	0.4	0.0	1.2	1.2	0.0	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	0.7	3.1	3.1	3.2	2.2	2.3	1.3	0.0	1.5	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	16.3	16.3	27.2	10.2	10.2	15.4	0.0	16.7	17.5	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B	A	B	B	A	A
Approach Vol, veh/h		802			1042			343			236	
Approach Delay, s/veh		17.0			14.7			16.1			17.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.5	13.0	17.6		14.5	7.3	23.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	6.4	22.1				
Max Q Clear Time (g_c+I1), s		6.6	8.6	10.3		9.1	3.6	9.1				
Green Ext Time (p_c), s		1.2	0.2	2.8		0.9	0.0	4.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.9									
HCM 6th LOS			B									

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1062	1226	171	20
Demand Flow Rate, veh/h	1083	1251	174	20
Vehicles Circulating, veh/h	204	89	1090	1257
Vehicles Exiting, veh/h	1073	1175	197	82
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.3	8.0	11.0	7.9
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	509	574	588	663	174	20
Cap Entry Lane, veh/h	1119	1194	1244	1317	562	488
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.983	0.999
Flow Entry, veh/h	499	563	576	650	171	20
Cap Entry, veh/h	1097	1171	1219	1291	552	487
V/C Ratio	0.455	0.481	0.473	0.504	0.310	0.041
Control Delay, s/veh	8.3	8.3	7.9	8.1	11.0	7.9
LOS	A	A	A	A	B	A
95th %tile Queue, veh	2	3	3	3	1	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	911	2	175	943	10	17	0	141	8	1	9
Future Volume (veh/h)	64	911	2	175	943	10	17	0	141	8	1	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	70	990	2	190	1025	11	18	0	153	9	1	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	119	1358	3	243	1596	17	111	12	235	207	53	135
Arrive On Green	0.07	0.37	0.37	0.14	0.44	0.44	0.17	0.00	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3639	7	1781	3602	39	93	74	1418	494	320	815
Grp Volume(v), veh/h	70	483	509	190	506	530	171	0	0	20	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1863	1584	0	0	1630	0	0
Q Serve(g_s), s	1.6	9.7	9.7	4.3	9.2	9.2	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	9.7	9.7	4.3	9.2	9.2	4.2	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.11		0.89	0.45		0.50
Lane Grp Cap(c), veh/h	119	663	698	243	788	826	358	0	0	395	0	0
V/C Ratio(X)	0.59	0.73	0.73	0.78	0.64	0.64	0.48	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	218	833	876	364	978	1026	794	0	0	790	0	0
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	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.9	11.2	11.2	17.4	9.0	9.0	16.2	0.0	0.0	14.7	0.0	0.0
Incr Delay (d2), s/veh	4.6	2.5	2.3	6.2	1.0	0.9	1.0	0.0	0.0	0.1	0.0	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	0.7	3.3	3.5	1.9	2.7	2.8	1.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	13.7	13.6	23.6	10.0	10.0	17.2	0.0	0.0	14.7	0.0	0.0
LnGrp LOS	C	B	B	C	B	A	B	A	A	B	A	A
Approach Vol, veh/h		1062			1226			171			20	
Approach Delay, s/veh		14.3			12.1			17.2			14.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		11.4	10.2	20.0		11.4	7.3	22.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.5	8.5	19.5		18.5	5.1	22.9
Max Q Clear Time (g_c+I1), s		6.2	6.3	11.7		2.4	3.6	11.2
Green Ext Time (p_c), s		0.7	0.1	3.8		0.0	0.0	5.2

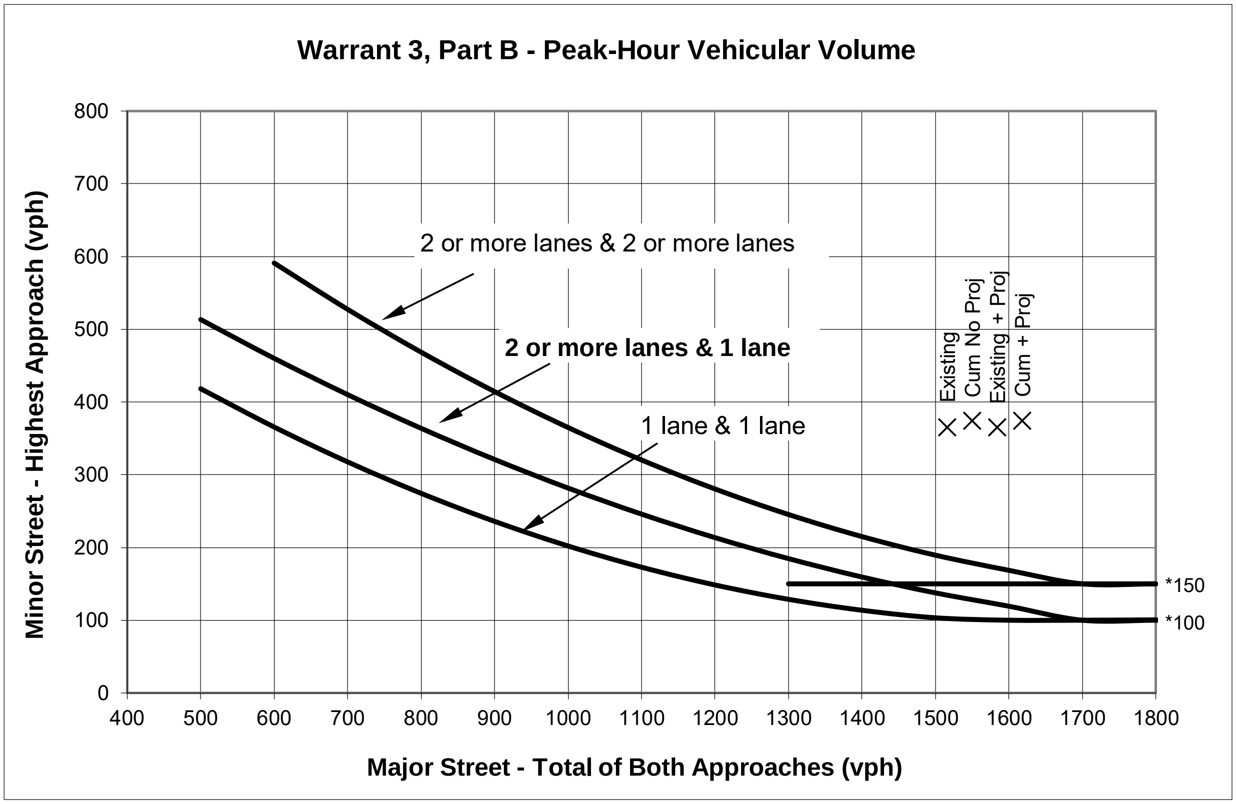
Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Appendix E

Signal Warrants

Mill Valley Housing Element Update

Miller Avenue and Reed Street/Valley Circle **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

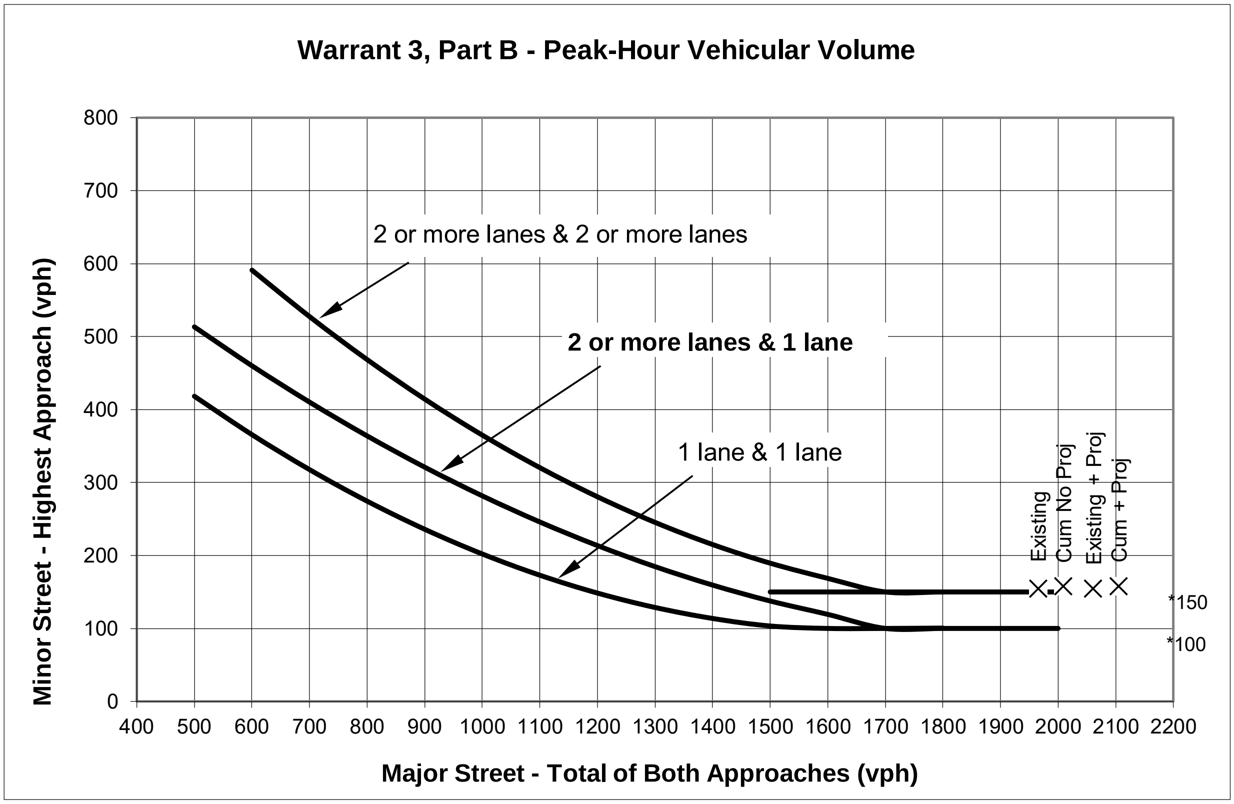
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	1516	1584	1550	1618				
Minor Street - Highest Approach	Valley Circle/ Reed Street	X		365	365	374	374				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Miller Avenue and Reed Street/Valley Circle — PM PEAK HOUR



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

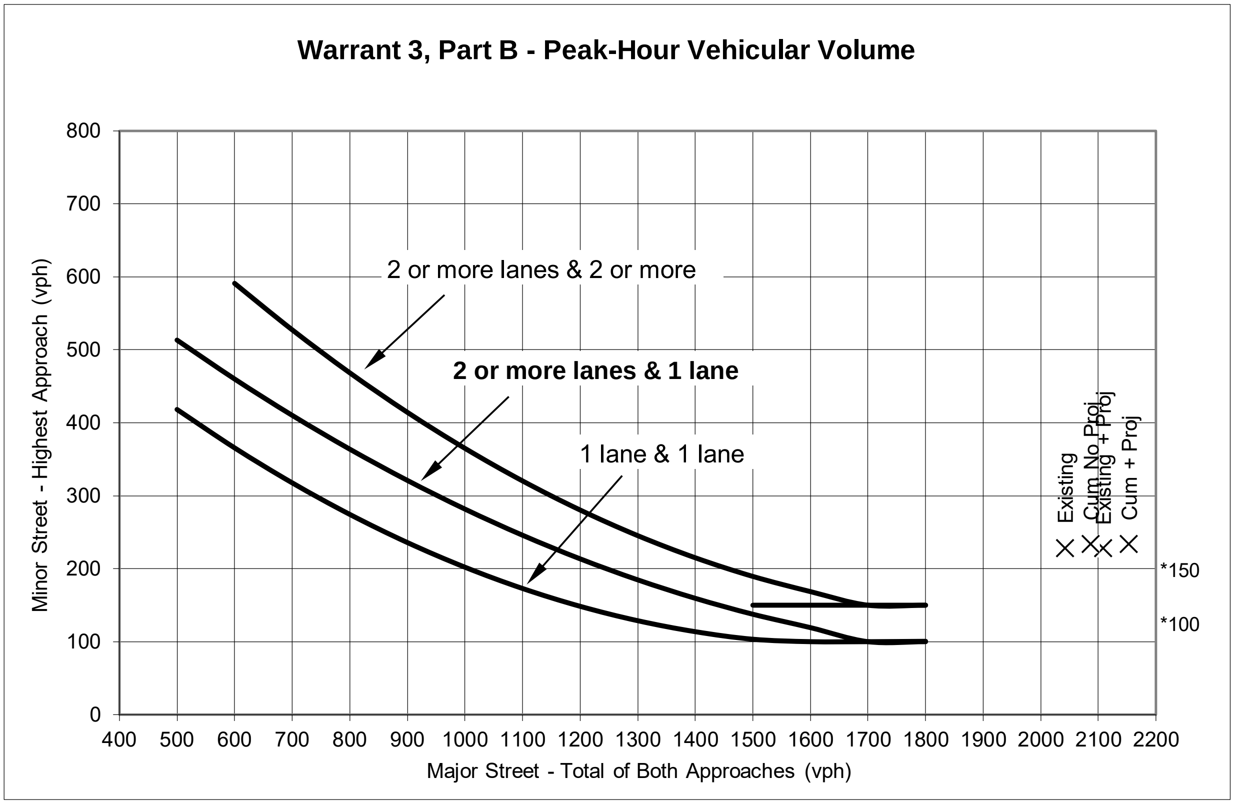
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	1965	2061	2009	2105				
Minor Street - Highest Approach	Valley Circle/ Reed Street	X		155	155	158	158				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Miller Avenue and Reed Street/Valley Circle — MID PEAK HOUR



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

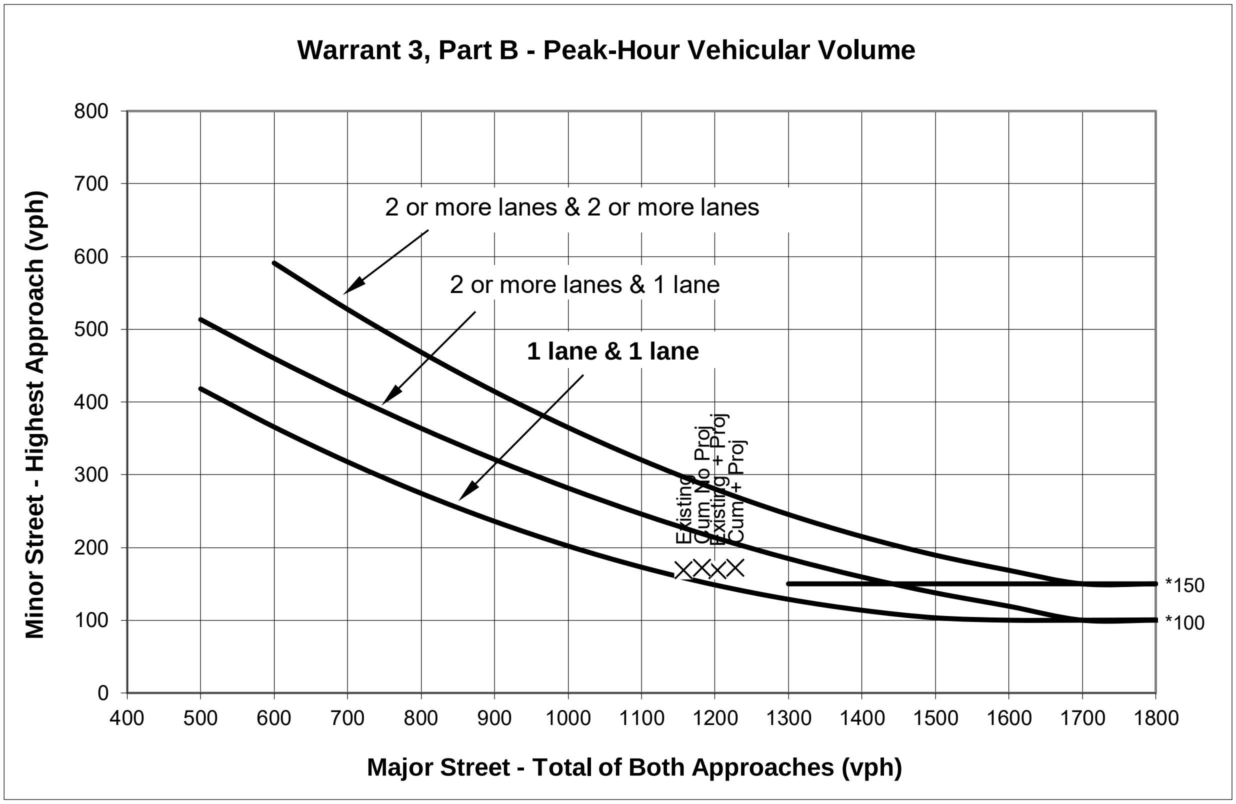
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	MID PEAK HOUR: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	2042	2108	2087	2153				
Minor Street - Highest Approach	Valley Circle/ Reed Street	X		228	228	234	234				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Carmelita Avenue and E. Blithedale Avenue **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

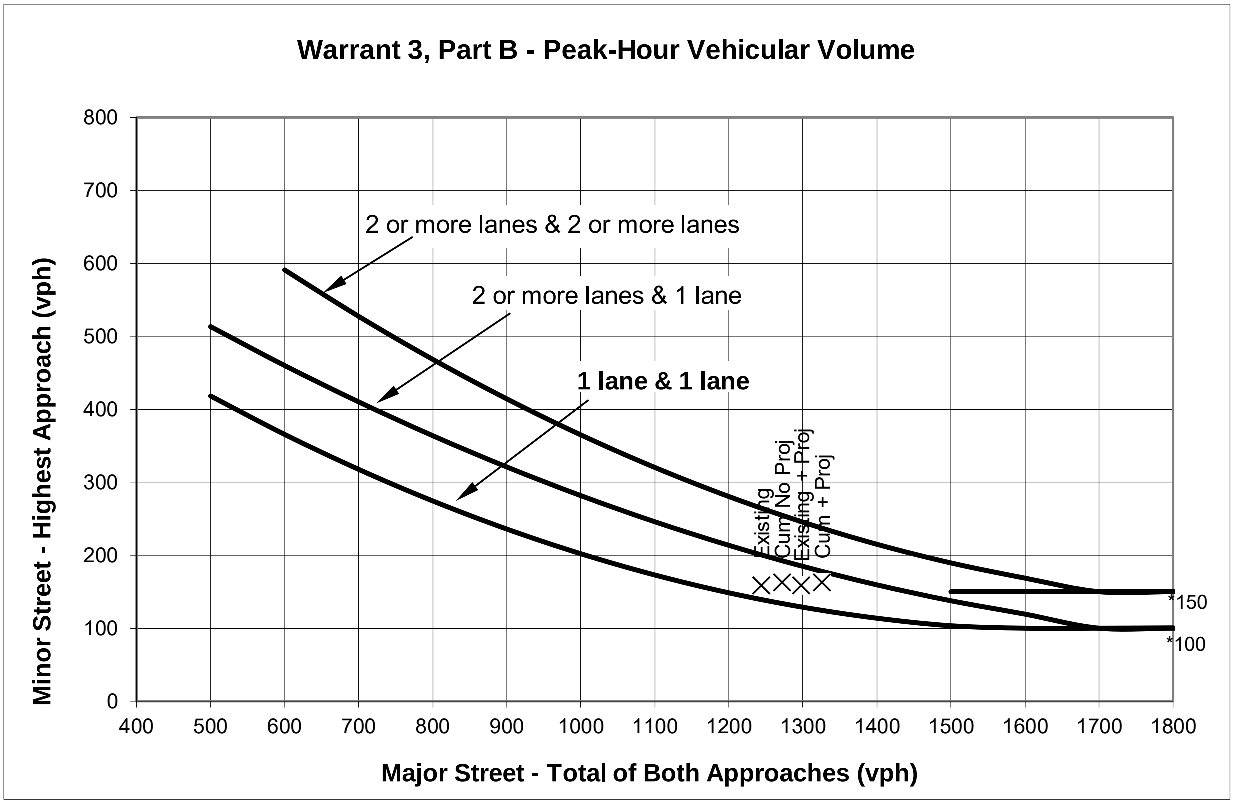
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	E. Blithedale Avenue	X		1157	1203	1182	1228				
Minor Street - Highest Approach	Carmelita Avenue	X		169	169	172	172				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Carmelita Avenue and E. Blithedale Avenue **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

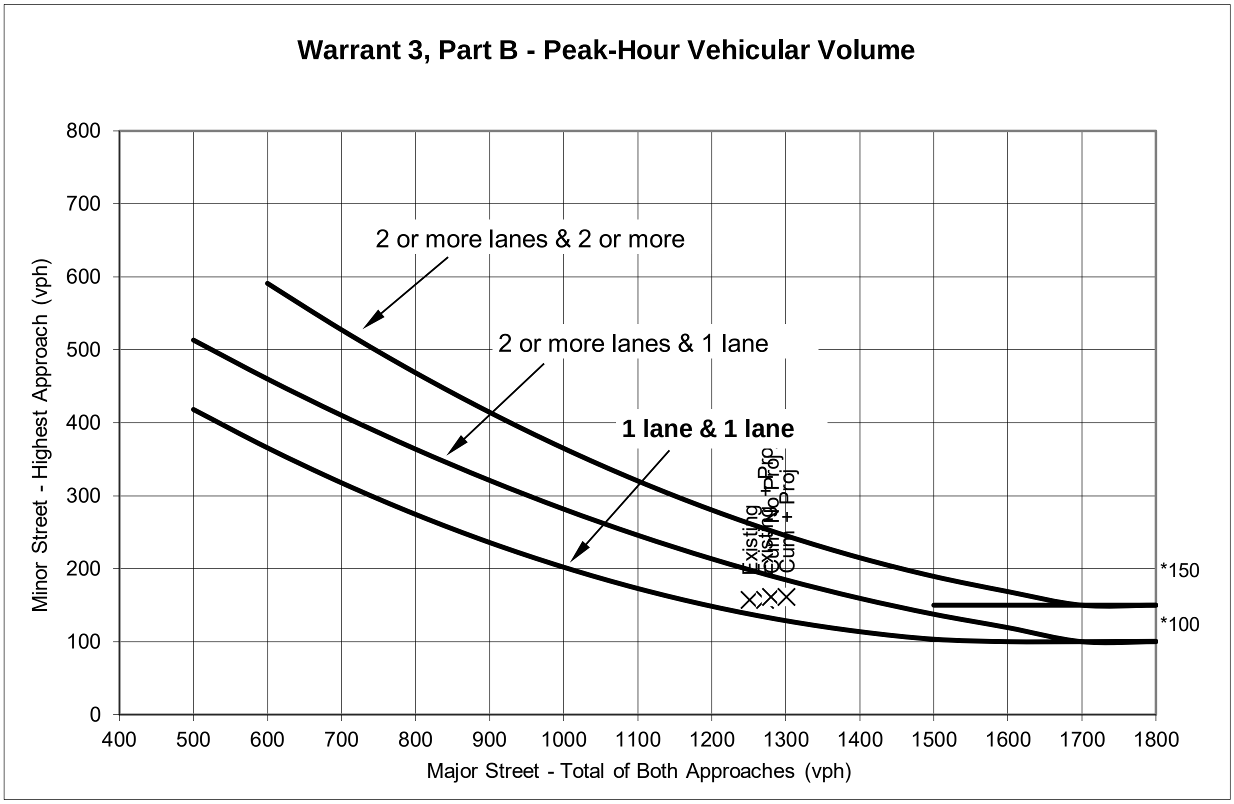
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	E. Blithedale Avenue	X		1244	1298	1272	1326				
Minor Street - Highest Approach	Carmelita Avenue	X		159	159	163	163				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Carmelita Avenue and E. Blithedale Avenue **MID PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

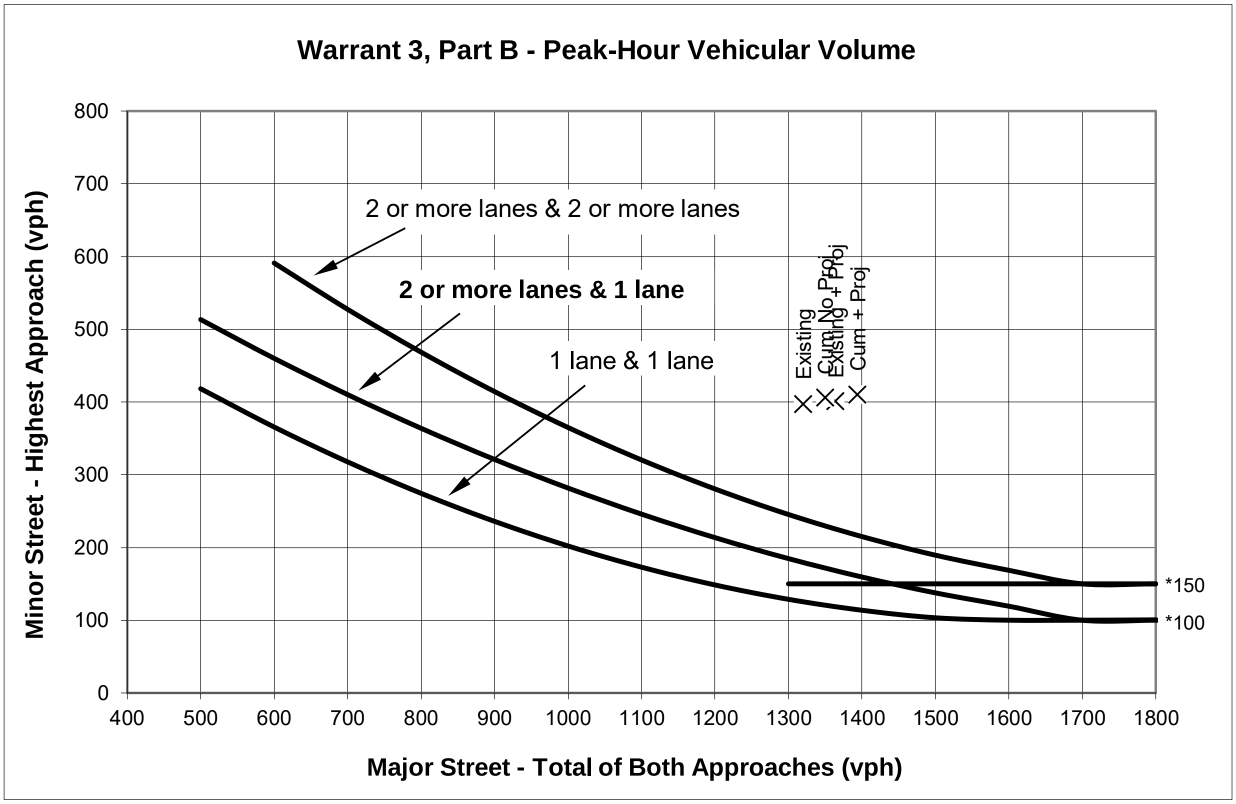
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		MID PEAK HOUR							
		One	2 or More	Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	E. Blithedale Avenue	X		1251	1272	1280	1301				
Minor Street - Highest Approach	Carmelita Avenue	X		157	157	161	161				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Miller Avenue and Montford Avenue/La Goma Street **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

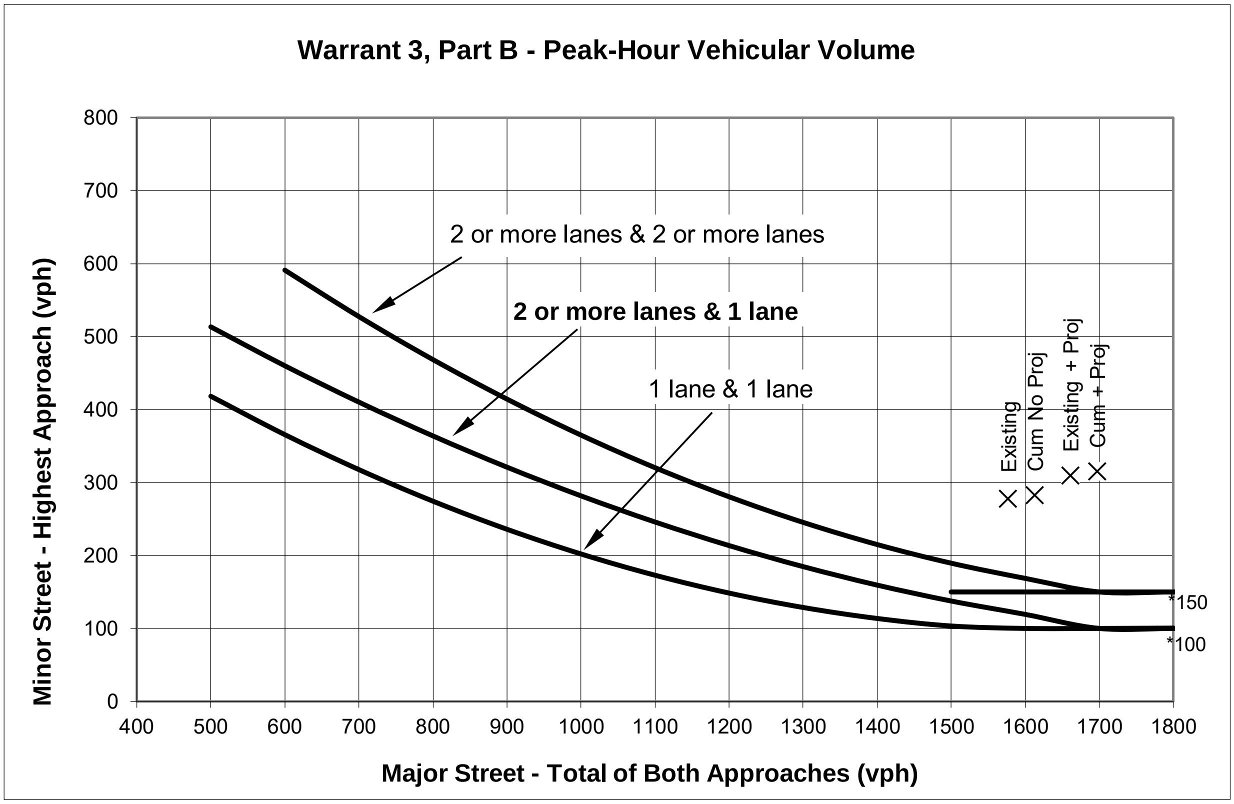
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	1320	1364	1350	1394				
Minor Street - Highest Approach	La Goma Street/ Montford Avenue	X		397	401	406	410				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Miller Avenue and Montford Avenue/La Goma Street **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

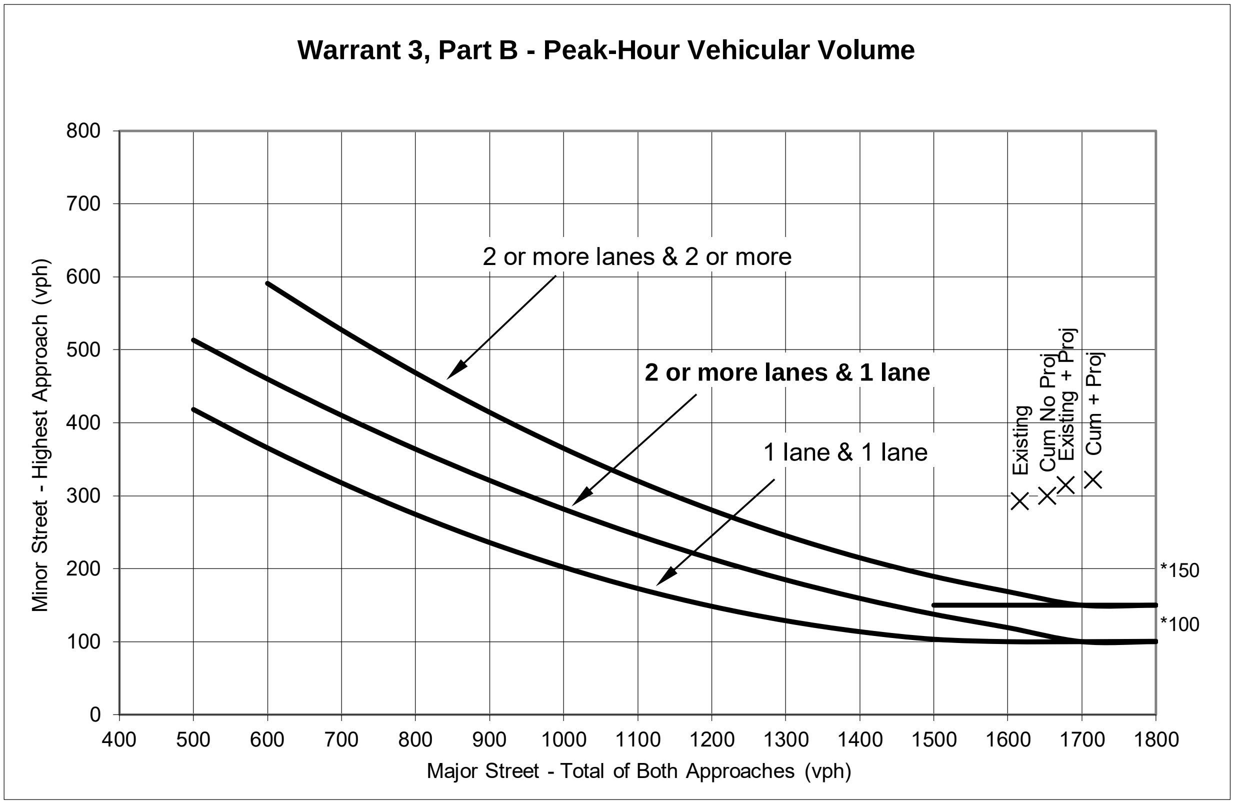
Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	1577	1661	1613	1697				
Minor Street - Highest Approach	La Goma Street/ Montford Avenue	X		278	310	283	315				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Mill Valley Housing Element Update

Miller Avenue and Montford Avenue/La Goma Street — **MID PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	MID PEAK HOUR: Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Major Street - Both Approaches	Miller Avenue		X	1616	1678	1653	1715				
Minor Street - Highest Approach	La Goma Street/ Montford Avenue	X		293	315	300	322				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.